PTO/SB/52 (03-02)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE


# REISSUE APPLICATION DECLARATION BY THE ASSIGNEE

Docket Number (optional): 12406/106

I hereby declare that:

My residence, mailing address and citizenship are stated below.

I am authorized to act on behalf of the following assignee: **GTECH Corporation**

and the title of my position with said assignee is: **Assistant Secretary**

The entire title to the patent identified below is vested in said assignee.

| Inventor | Citizenship |
|---|---|
| **Joseph C. PERIN , Jr.** | **USA** |

Residence/Mailing Address
6479 Grand Vista, Cincinnati, Ohio 45213

| Inventor | Citizenship |
|---|---|
| **David G. WAGONER** | **USA** |

Residence/Mailing Address
9614 Waterford Place, # 310, Loveland, Ohio 45140

☐ Additional Inventors are named on separately numbered sheets attached hereto.

| Patent | Date of Patent Issued |
|---|---|
| **US 6,356,794 B1** | **03/12/2002** |

Title of Invention
**ITEM DISPENSING SYSTEM NETWORK**

I believe said inventor(s) to be the original and first inventor(s) of the subject matter which is described and claimed in said patent, for which a reissue patent is sought on the invention entitled:
**ITEM DISPENSING SYSTEM NETWORK**

the specification of which

☒ is attached hereto.

☐ was filed on _____ as reissue application number _____
and was amended on _____
(If applicable)

I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I verily believe the original patent to be wholly or partly inoperative or invalid, for the reasons described below. (Check all boxes that apply.)

☐ by reason of a defective specification or drawing.

☒ by reason of the patentee claiming more or less than he had the right to claim in the patent.

☐ by reason of other errors.

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| REISSUE APPLICATION DECLARATION BY THE ASSIGNEE | Docket Number (Optional) 12406/106 |
|---|---|

At least one error upon which reissue is based is described as follows:

**All originally issued claims are less broad than newly added claims 17 - 78.**

[Attach additional sheets, if needed.]

All errors corrected in this reissue application arose without any deceptive intention on the part of the applicant.

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith.

| Name(s) | Registration Number |
|---|---|
| **Thomas J. Meloro** | **33,538** |
| **Gerard A. Messina** | **35,952** |
| **Andrew L. Reibman** | **47,893** |

Correspondence Address: Direct all communications about the application to:

☒ Customer Number **26646** → *Place Customer Number Bar Code Label Here*

*Type Customer Number Here*

***OR***

| | | | | | |
|---|---|---|---|---|---|
| ☒ Firm or Individual Name | **Gerard A. Messina** | | | | |
| Address | **Kenyon & Kenyon** | | | | |
| Address | **One Broadway** | | | | |
| City | **New York** | State | **NY** | Zip | **10004-1050** |
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| Telephone | **(212) 425-7200** | Fax | **(212) 425-5288** | | |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.

Full name of person signing (given name, family name)
**Martin J. Ahlijanian**

| Signature | Date |
|---|---|
| Martin J. Ahlijanian | 6/28/04 |

Address of Assignee
**GTECH Corporation, 55 Technology Way, West Greenwich, RI 02817**

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| REISSUE APPLICATION DECLARATION BY THE INVENTOR | Docket Number (Optional) 12406/106 |
|---|---|

I hereby declare that:
Each inventor's residence, mailing address and citizenship are stated below next to their name.
I believe the inventors named below to be the original and first inventor(s) of the subject matter which is described and claimed in patent number US 6,356,794 B1, granted March 12, 2002 and for which a reissue patent is sought on the invention entitled ITEM DISPENSING SYSTEM NETWORK,

_____,

the specification of which

[X] is attached hereto.

☐ was filed on _____ as reissue application number _____

and was amended on _____.
(If applicable)

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.
I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

☐ I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b). Attached is form PTO/SB/02B (or equivalent) listing the foreign applications.

I verily believe the original patent to be wholly or partly inoperative or invalid, for the reasons described below. (Check all boxes that apply.)

☐ by reason of a defective specification or drawing.

[X] by reason of the patentee claiming more or less than he had the right to claim in the patent.

☐ by reason of other errors.

At least one error upon which reissue is based is described below. If the reissue is a broadening reissue, such must be stated with an explanation as to the nature of the broadening:

All originally issued claims are less broad than newly added claims 17-78.

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(REISSUE APPLICATION DECLARATION BY THE INVENTOR, page 2)

Docket Number (Optional): 12406/106

All errors corrected in this reissue application arose without any deceptive intention on the part of the applicant.

Note: To appoint a power of attorney, use form PTO/SB/81.

Correspondence Address: Direct all communications about the application to:

[X] Customer Number: 26646

*OR*

| | | | | | |
|---|---|---|---|---|---|
| [X] Firm or Individual Name | Gerard A. Messina | | | | |
| Address | Kenyon & Kenyon | | | | |
| Address | One Broadway | | | | |
| City | New York | State | NY | Zip | 10004 |
| Country | USA | | | | |
| Telephone | (212) 425-7200 | Fax | (212) 425-5288 | | |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.

Full name of sole or first inventor (given name, family name): Joseph C. PERRY, Jr.

Inventor's signature: Joseph C. Perry, Jr. Date: 07-28-2004

Residence: 6479 Grand Vista, Cincinnati, Ohio 45213 Citizenship: USA

Mailing Address: (same as above)

Full name of second joint inventor (given name, family name): David G. WAGONER

Inventor's signature: Date: 07-28-2004

Residence: 9614 Waterford Place, #310 Loveland, Ohio 45140 Citizenship: USA

Mailing Address: (same as above)

Full name of third joint inventor (given name, family name):

Inventor's signature: Date:

Residence: Citizenship:

Mailing Address:

[ ] Additional joint inventors or legal representative(s) are named on separately numbered sheets forms PTO/SB/02A or 02LR attached hereto.

3. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a bill acceptor adapted to accept bills,

a fault store which stores

a fault threshold representing a stored number smaller than a number of bills storable in the bill acceptor, and

a fault being switchable to a first state in response to the bill acceptor storing a number of bills at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the bill acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

4. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a coin acceptor adapted to accept coins,

a fault store which stores

a fault threshold representing a stored number smaller than a number of coins storable in the coin acceptor, and

a fault being switchable to a first state in response to the coin acceptor storing a number of coins at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the coin acceptor, the controller producing an alarm generated in response to detecting only a deterioration of the fualt; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

5. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a cash acceptor,

a fault store for storing which stores

a fault threshold representing a stored value smaller than a desired total cash value to be stored in the cash acceptor, and

a fault being switchable to a first state in response to the cash acceptor storing a total cash value at least equal to the stored value; and

a controller in electrical communications with the item dispenser, the fault store and the cash acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

6. The item dispensing system of claim 5 further comprising a printer in electrical communications with the controller.

7. The item dispensing system of claim 5 wherein the controller produces an alarm in response to detecting the first state of the fault.

8. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

first and second fault thresholds representing respective first and second numbers smaller than a number of items dispensable by first and second item dispensers, respectively, and

first and second faults being switchable to a first state in response to the first and second item dispensers dispensing a number of items at least equal to the first and second numbers, respectively, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting only a deterioration of both of the first and second fault states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

**9**. The item dispensing system of claim **8** wherein the controller produces the alarm in response to the first and second faults being switched to their respective first and second fault states.

**10**. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

a plurality of fault thresholds, each fault threshold representing a first number smaller than a maximum number of items dispensable by a respective item dispenser, and

a plurality of faults, each fault being switchable to a respective first state in response to a respective item dispenser dispensing a number of items at least equal to the first number, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting a predetermined number of the faults being switched to deteriorated states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

**11**. The item dispensing system of claim **10** wherein the controller produces the alarm in response to the predetermined number of the faults being switched to their respective first states.

**12**. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores a fault threshold and a fault; and

a controller which independently operates the item dispenser and providing data relating to items dispensed by the item dispenser, the controller being in electrical communications with the item dispenser and the fault store, and the controller producing an alarm in response to detecting a change of state of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm and the data relating to items dispensed by the item dispensers from the controller; and

another computer located geographically remotely from the retail locations and the host computer, the other computer in electrical communications with the host computer for receiving data relating to items dispensed at one of the retail locations.

13. The item dispensing system of claim 12 wherein the controller produces an alarm in response to detecting a deterioration of the fault.

14. The item dispensing system of claim 12 further comprising a fault store for storing

a fault threshold representing an operating state of the item dispenser, and

a fault having two states.

15. The item dispensing system of claim 14 wherein the controller

switches the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and

produces the alarm in response to detecting only a deterioration of the fault.

16. The item dispensing system of claim 15 wherein the controller produces the alarm in response to detecting the first state of the fault.

* * * * *

**In the Claims:**

1. (Original) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

a fault threshold representing an operating state of the item dispenser, and

a fault having two states; and

a controller in electrical communications with the item dispenser and the fault store, the controller

switching the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and

producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

2. (Original) The item dispensing system of claim 1 wherein the controller produces an alarm in response to detecting the first state of the fault.

3. (Original) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a bill acceptor adapted to accept bills,

a fault store which stores

a fault threshold representing a stored number smaller than a number of bills storable in the bill acceptor, and

a fault being switchable to a first state in response to the bill acceptor storing a number of bills at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the bill acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

4. (Presently Amended) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a coin acceptor adapted to accept coins,

a fault store which stores

a fault threshold representing a stored number smaller than a number of coins storable in the coin acceptor, and

a fault being switchable to a first state in response to the coin acceptor storing a number of coins at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the coin acceptor, the controller producing an alarm generated in response to detecting only a deterioration of the [fualt] fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

5. (Original) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a cash acceptor,

a fault store which stores

a fault threshold representing a stored value smaller than a desired total cash value to be stored in the cash acceptor, and

a fault being switchable to a first state in response to the cash acceptor storing a total cash value at least equal to the stored value; and

a controller in electrical communications with the item dispenser, the fault store and the cash acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

6. (Original) The item dispensing system of claim 5 further comprising a printer in electrical communications with the controller.

7. (Original) The item dispensing system of claim 5 wherein the controller produces an alarm in response to detecting the first state of the fault.

8. (Original) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

first and second fault thresholds representing respective first and second numbers smaller than a number of items dispensable by first and second item dispensers, respectively, and

first and second faults being switchable to a first state in response to the first and second item dispensers dispensing a number of items at least equal to the first and second numbers, respectively, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting only a deterioration of both of the first and second fault states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

9. (Original) The item dispensing system of claim 8 wherein the controller produces the alarm in response to the first and second faults being switched to their respective first and second fault states.

10. (Original) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

a plurality of fault thresholds, each fault threshold representing a first number smaller than a maximum number of items dispensable by a respective item dispenser, and

a plurality of faults, each fault being switchable to a respective first state in response to a respective item dispenser dispensing a number of items at least equal to the first number, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting a predetermined number of the faults being switched to deteriorated states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

11. (Original) The item dispensing system of claim 10 wherein the controller produces the alarm in response to the predetermined number of the faults being switched to their respective first states.

12. (Original) An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores a fault threshold and a fault; and

a controller which independently operates the item dispenser and providing data relating to items dispensed by the item dispenser, the controller being in electrical communications with the item dispenser and the fault store, and the controller producing an alarm in response to detecting a change of state of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm and the data relating to items dispensed by the item dispensers from the controller; and

another computer located geographically remotely from the retail locations and the host computer, the other computer in electrical communications with the host computer for receiving data relating to items dispensed at one of the retail locations.

13. (Original) The item dispensing system of claim 12 wherein the controller produces an alarm in response to detecting a deterioration of the fault.

14. (Original) The item dispensing system of claim 12 further comprising a fault store for storing

a fault threshold representing an operating state of the item dispenser, and

a fault having two states.

15. (Original) The item dispensing system of claim 14 wherein the controller

switches the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and

produces the alarm in response to detecting only a deterioration of the fault.

16. (Original) The item dispensing system of claim 15 wherein the controller produces the alarm in response to detecting the first state of the fault.

17. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores a fault threshold representing an operating state of the lottery ticket dispenser,

and a fault having two states;

a controller in electrical communications with the lottery ticket dispenser and the fault store, the controller switching the fault to a first state in response to detecting the operating state of the lottery ticket dispenser represented by the fault threshold, and producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communication with, and receiving the alarm from, the controller.

18. (New) The system of claim 17, wherein the lottery ticket dispenser further includes
a storage unit storing instant win lottery tickets in a continuous strip, and
a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

19. (New) The system of claim 18, wherein the controller produces an alarm in response to detecting the first state of the fault.

20. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a bill acceptor adapted to accept bills,

a fault store which stores a fault threshold representing a stored number smaller than a number of bills storable in the bill acceptor, and

a fault being switchable to a first state in response to the bill acceptor storing a number of bills at least equal to the stored number, and

a controller in electrical communications with the lottery ticket dispenser, the fault store and the bill acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

21. (New) The system of claim 20, wherein the lottery ticket dispenser further includes
a storage unit storing instant win lottery tickets in a continuous strip, and
a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

22. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a cash acceptor,

a fault store for storing which stores a fault threshold representing a stored value smaller than a desired total cash value to be stored in the cash acceptor, and

a fault being switchable to a first state in response to the cash acceptor storing a total cash value at least equal to the stored value; and

a controller in electrical communications with the lottery ticket dispenser, the fault store and the cash acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

23. (New) The system of claim 22, wherein the lottery ticket dispenser further includes
a storage unit storing instant win lottery tickets in a continuous strip, and
a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

24. (New) The system of claim 22, further comprising:
a printer in electrical communications with the controller.

25. (New) The system of claim 22, wherein the controller produces an alarm in response to detecting the first state of the fault.

26. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores first and second fault thresholds representing respective first and second numbers smaller than a number of lottery tickets dispensable by first and second lottery ticket dispensers, respectively, and

first and second faults being switchable to a first state in response to the first and second lottery ticket dispensers dispensing a number of lottery tickets at least equal to the first and second numbers, respectively, and

a controller in electrical communications with the lottery ticket dispenser and the fault store, the controller producing an alarm in response to detecting only a deterioration of both of the first and second fault states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

27. (New) The system of claim 26, wherein the lottery ticket dispenser further includes:

a storage unit storing instant win lottery tickets in a continuous strip, and

a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

28. (New) The lottery ticket dispensing system of claim 26, wherein the controller produces the alarm in response to either the first and second faults being switched to their respective first and second fault states.

29. (New) The lottery ticket dispensing system of claim 26, wherein the controller produces the alarm in response to both the first and second faults being switched to their respective first and second fault states.

30. (New) The lottery ticket dispensing system of claim 29, wherein the controller does not produce the alarm in response to only the first or only the second fault being switched to their respective first and second fault states.

31. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores a plurality of fault thresholds, each fault threshold representing a first number smaller than a maximum number of lottery tickets dispensable by a respective lottery ticket dispenser, and

a plurality of faults, each fault being switchable to a respective first state in response to a respective lottery ticket dispenser dispensing a number of lottery tickets at least equal to the first number, and

a controller in electrical communications with the lottery ticket dispenser and the fault store, the controller producing an alarm in response to detecting a predetermined number of the faults being switched to deteriorated states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

32. (New) The system of claim 31, wherein the lottery dispenser further includes

a storage unit storing instant win lottery tickets in a continuous strip, and

a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

33. (New) The lottery ticket dispensing system of claim 31, wherein the controller produces the alarm in response to the predetermined number of the faults being switched to their respective first states.

34. (New) A lottery ticket dispensing system comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the

lottery ticket dispensers comprising

a fault store which stores a fault threshold and a fault; and

a controller which independently operates the lottery ticket dispenser and providing data relating to lottery tickets dispensed by the lottery ticket dispenser, the controller being in electrical communications with the lottery ticket dispenser and the fault store, and the controller producing an alarm in response to detecting a change of state of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm and the data relating to lottery tickets dispensed by the lottery ticket dispensers from the controller; and

another computer located geographically remotely from the retail locations and the host computer, the other computer in electrical communications with the host computer for receiving data relating to lottery tickets dispensed at one of the retail locations.

35. (New) The system of claim 34, wherein the lottery ticket dispenser further includes
a storage unit storing instant win lottery tickets in a continuous strip, and
a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

36. (New) The lottery ticket dispensing system of claim 34, wherein the controller produces an alarm in response to detecting a deterioration of the fault.

37. (New) The lottery ticket dispensing system of claim 34, further comprising:

a fault store for storing a fault threshold representing an operating state of the lottery ticket dispenser, and a fault having two states.

38. (New) The lottery ticket dispensing system of claim 34, wherein the controller

switches the fault to a first state in response to detecting the operating state of the lottery ticket dispenser represented by the fault threshold, and

produces the alarm in response to detecting only a deterioration of the fault.

39. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores a fault threshold representing an operating state of the lottery ticket dispenser,
and a fault having at least two states;

a controller in communication with the lottery ticket dispenser and the fault store, the controller switching the fault to a first state in response to detecting the operating state of the lottery ticket dispenser represented by the fault threshold, and producing an alarm in response

to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in communication with, and receiving the alarm from, the controller.

40. (New) The system of claim 39 wherein the lottery dispenser further includes

a storage unit storing instant win lottery tickets in a continuous strip, and

a separator for separating an instant win lottery ticket from the continuous strip in response to a player request to purchase an instant win lottery ticket.

41. (New) The system of claim 39, wherein the alarm is received by the host from the controller in real time.

42. (New) The system of claim 39, wherein the alarm is received by the host from the controller in real time in batches transmitted at regular intervals.

43. (New) The system of claim 42, wherein the regular interval is daily.

44. (New) The system of claim 42, wherein the regular interval is once a shift.

45. (New) The lottery ticket dispensing system of claim 39, further comprising:

an alarm produced by the controller in response to detecting the first state of the fault.

46. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a bill acceptor adapted to accept bills,

a fault store which stores a fault threshold representing a stored number smaller than a number of bills storable in the bill acceptor, and

a fault being switchable to a first state in response to the bill acceptor storing a number of bills at least equal to the stored number, and

a controller in electrical communications with the lottery ticket dispenser, the fault store and the bill acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in communication, and receiving the alarm from, the controller.

47. (New) The system of claim 46, wherein each of the plurality of lottery ticket dispensers has a respective controller, each lottery ticket dispenser and its respective controller co-located in a single cabinet.

48. (New) The system of claim 46, wherein more than one of the plurality of lottery ticket dispenser shares a common controller.

49. (New) The system of claim 48, wherein the common controller is co-located in a common cabinet with an at least one of the more than one of the plurality of lottery ticket dispensers.

50. (New) The system of claim 49, wherein a second at least one of the more than one of the plurality of lottery ticket dispensers is not located in the common cabinet.

51. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a cash acceptor,

a fault store for storing which stores a fault threshold representing a stored value smaller than a desired total cash value to be stored in the cash acceptor, and

a fault being switchable to a first state in response to the cash acceptor storing a total cash value at least equal to the stored value; and

a controller in communication with the lottery ticket dispenser, the fault store and the cash acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in communication with, and receiving the alarm from, the controller.

52. (New) The lottery ticket dispensing system of claim 51, further comprising:
a printer in electrical communications with the controller.

53. (New) The lottery ticket dispensing system of claim 51, wherein the controller produces an alarm in response to detecting the first state of the fault.

54. (New) A lottery ticket dispensing system comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores first and second fault thresholds representing respective first and second numbers smaller than a number of lottery tickets dispensable by first and second lottery ticket dispensers respectively, and

first and second faults being switchable to a first state in response to the first and second lottery ticket dispensers dispensing a number of lottery tickets at least equal to the first and second numbers, respectively, and

a controller in communication with the lottery ticket dispenser and the fault store, the controller producing an alarm in response to detecting only a deterioration of both

of the first and second fault states; and

a host computer located geographically remotely from the retail locations, the host computer being in communication with, and receiving the alarm from, the controller.

55. (New) The system of claim 54, wherein the first and second lottery ticket dispensers are located at the same geographic location.

56. (New) The system of claim 55, wherein the first and second lottery ticket dispensers are located in a common cabinet.

57. (New) The lottery ticket dispensing system of claim 54, wherein the controller produces the alarm in response to the first and second faults being switched to their respective first and second fault states.

58. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores a plurality of fault thresholds, each fault threshold representing a first number smaller than a maximum number of lottery tickets dispensable by a respective lottery ticket dispenser, and

a plurality of faults, each fault being switchable to a respective first state in response to a respective lottery ticket dispenser dispensing a number of lottery tickets at least equal to the first number, and

a controller in electrical communications with the lottery ticket dispenser and the fault store, the controller producing an alarm in response to detecting a predetermined number of the faults being switched to deteriorated states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

59. (New) The lottery ticket dispensing system of claim 58, wherein the controller produces the alarm in response to the predetermined number of the faults being switched to their respective first states.

60. (New) A lottery ticket dispensing system, comprising:

a plurality of lottery ticket dispensers located at different retail locations, each of the lottery ticket dispensers comprising

a fault store which stores a fault threshold and a fault; and

a controller which independently operates the lottery ticket dispenser and provides data relating to lottery tickets dispensed by the lottery ticket dispenser, the controller being in

communication with the lottery ticket dispenser and the fault store, and the controller producing an alarm in response to detecting a change of state of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in communication with, and receiving the alarm and the data relating to lottery tickets dispensed by the lottery ticket dispensers from the controller; and

another computer located geographically remotely from the retail locations and the host computer, the other computer in electrical communications with the host computer for receiving data relating to lottery tickets dispensed at one of the retail locations.

61. (New) The lottery ticket dispensing system of 60, wherein the controller produces an alarm in response to detecting a deterioration of the fault.

62. (New) The lottery ticket dispensing system of claim 60, further comprising:

a fault store for storing a fault threshold representing an operating state of the lottery ticket dispenser, and a fault having two states.

63. (New) The lottery ticket dispensing system of claim 62, wherein the controller

switches the fault to a first state in response to detecting the operating state of the lottery ticket dispenser represented by the fault threshold, and

produces the alarm in response to detecting only a deterioration of the fault.

64. (New) The lottery ticket dispensing system of claim 63, wherein the controller produces the alarm in response to detecting the first state of the fault.

65. (New) An instant lottery ticket vending machine comprising:
a controller;
a customer input device;
at least one storage unit containing instant lottery tickets;
an instant lottery ticket dispenser in communication with the controller, the controller independently controlling the instant lottery ticket dispenser to dispense an instant lottery ticket from the at least one storage unit in response to a customer request to purchase an instant lottery ticket received by the customer input device; and
an alarm produced by the controller in response to the deterioration of a state of the instant lottery ticket vending machine.

66. (New) The instant lottery ticket vending machine of claim 65, wherein the instant ticket dispenser includes
a lottery ticket separator in communication with the controller, the lottery ticket separator receiving from the at least one storage unit an instant lottery ticket joined to a continuous strip of instant lottery tickets and separating the lottery ticket from the continuous strip of instant lottery tickets.

67. (New) The instant lottery ticket vending machine of claim 65,

wherein the deterioration of the state of the instant lottery ticket vending machine occurs when the number of instant lottery tickets stored in the at least one storage unit is less than a predetermined threshold.

68. (New) The instant lottery ticket vending machine of claim 67, wherein the predetermined threshold is greater than one and less than the maximum number of instant lottery tickets which can be stored in the at least one storage unit.

69. (New) The instant lottery ticket vending machine of claim 65, further comprising
a network interface in communication with the controller, the controller transmitting the alarm via the network interface.

70. (New) The instant lottery ticket vending machine of claim 65, further comprising:
a cash acceptor in communication with the controller, and
wherein the deterioration of the state of the instant lottery ticket vending machine occurs when the total value of cash stored by the cash acceptor exceeds a predetermined threshold.

71. (New) The instant lottery ticket vending machine of claim 70, wherein
the predetermined threshold is less than the maximum amount of cash which can be stored in the cash acceptor.

72. (New) The instant lottery ticket vending machine of claim 65, further comprising:
a bill acceptor in communication with the controller, and
wherein the deterioration of the state of the instant ticket vending machine occurs when the number of bills accepted by the bill acceptor exceeds a predetermined threshold.

73. (New) The instant lottery ticket vending machine of claim 72, wherein
the predetermined threshold is less than the maximum number of bills which can be stored in the bill acceptor.

74. (New) A lottery ticket dispensing system for dispensing instant win lottery tickets, comprising:
a lottery ticket vending machine including
a controller, and
at least one storage unit containing instant win lottery tickets; and
a host computer located at a different geographic location than the lottery ticket vending machine, the host computer in communication with the controller, the controller sending a fault message towards the host computer when a fault occurs in the lottery ticket vending machine.

75. (New) The system of claim 74, further comprising:
a separator unit to separate an instant win lottery ticket from a continuous strip of instant win lottery tickets stored in the at least on storage unit.

76. (New) The system of claim 74,
wherein the fault is having fewer than a predetermined number of lottery tickets stored in the at least one storage unit.

77. (New) The system of claim 74, further comprising:

a cash acceptor, the cash acceptor in communication with the controller, and wherein the fault is having more than a predetermined value of cash in the cash acceptor.

78. (New) The system of claim 74, further comprising:

a bill acceptor, the bill acceptor in communication with the controller, and wherein the fault is having more than a predetermined number of bills in the bill acceptor.

using that template, the user has the options of identifying the person servicing the alarm, a summary of the alarm and other comments relating to the resolution of the alarm and how it should be resolved. Upon the host computer **161** detecting, at **974**, that a resolution of the alarm has been entered, the host computer **161** then, at **976**, changes the status of the alarm to that of a resolved alarm for subsequent display and storage.

As part of the process of processing data from an item dispensing system, the host computer **161**, at **978**, determines whether a report has been requested by a client. If so, at **980**, the host computer **161** services that report request. The host computer **161**, at **982**, determines whether a client update is pending; and if so, at **984**, data is transferred from a client, for example, a state computer **171**, and stored in the vending machine update database **164** of the host computer **161**. It should be noted that the flowchart of FIGS. **13A** and **13B** is directed to the processing of alarms and is an expansion of the flowchart of FIG. **9**. The processing of data by the host computer **161** for reporting, and the processing of data from a client, is discussed in more detail in the description with reference to FIG. **9**.

The selectable or programmable fault thresholds of the present invention provide almost unlimited flexibility in being able to monitor the operating states of individual devices within each of the item dispensing systems **149** within the RDAC network **144**. First, the present invention has the ability to segregate fatal faults from nonfatal faults. Thus, alarms can be immediately transferred to the host computer **161** upon the occurrence of a fatal fault, that is, a fault indicating the item dispensing system is out of service. However the automatic creation of alarms based on nonfatal faults is avoided, thereby minimizing the occurrence of nuisance alarms and the dispatching of service agents to item dispensing systems that are not out of service. Second, the present invention has the capability of being able to independently adjust the fault thresholds for each of the individual devices within each of the item dispensing systems. Therefore, fault and alarm sensitivity can be adjusted to meet the unique requirements of each item dispensing system **149**.

This capability allows nonfatal faults and alarms to be tuned so that operating states of devices within the item dispensing system, which would normally lead to an out of service condition, can be tracked. Thus, a potential out of service condition can be anticipated, and the item dispensing system can be serviced before its occurrence. The present invention provides a significant advantage in being able to tailor and prioritize the generation and transmission of alarms to the host computer **161**. This operation of the system controller **145** limits the number of alarms presented to the host computer **161** and substantially reduces the load of the host computer **161** when it is connected to a large number of item dispensing systems. By performing that function automatically, the user of the host computer **161**, who is often responsible for the maintenance of hundreds of item dispensing systems, is presented with a burden that is significantly reduced. With the above capability, the allocation of service agent assets can be made more rational, efficient and cost effective to the benefit of everyone.

While the present invention has been illustrated by a description of various preferred embodiments and while these embodiments have been described in considerable detail in order to describe the best mode of practicing the invention, it is not the intention of Applicant to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications within the spirit and scope of the invention will readily appear to those skilled in the art. For example, in the described embodiment, the generation of faults and alarms is performed by the system controller **145**. While that embodiment is perceived to be more efficient and less costly, as will be appreciated, those tasks may alternatively be performed within the host computer **161** or some other computer either local with, or remote from, the system controller **145**.

Further, as will be appreciated, other system configurations can benefit from a distributive processing system that utilizes fault thresholds and faults as described herein. Such configurations include, but are not limited to, configurations in which a retailer collects the cash and thus, does not have bill or coin acceptors. Further, while several specific examples of fault thresholds and faults are described herein, the claimed invention can be used to detect other operating conditions of item dispensers.

In the described embodiment, a determination is made, at **206** of FIG. **12**, whether a current state of a fault represents a deterioration of the fault; and an alarm is only provided in the event that a deterioration of the fault is detected. As will be appreciated, the test for a fault deterioration is provided so that faults registered during a current iteration of the alarm manager subroutine can be distinguished from faults registered during prior iterations of the alarm manager subroutine. Faults registered during prior iterations of the alarm manager subroutine have already precipitated the transfer of an alarm to the host computer **161**. A retransmission of an alarm for a continuing fault as detected during a current iteration of the alarm manager subroutine is an inefficient user of valuable communications assets. Therefore, the alarm manager subroutine only generates alarms associated with deteriorated faults. As will be appreciated, although less efficient, the test for a deterioration of a fault may be omitted; and an alarm is generated for each current fault that is registered. Redundant alarms may or may not be subsequently identified and eliminated, if desired, either before or after their transmission to the host computer **161**.

Therefore, the invention in its broadest aspects is not limited to the specific detail shown and described. Consequently, departures may be made from the details described herein without departing from the spirit and scope of the claims which follow.

What is claimed is:

**1**. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

a fault threshold representing an operating state of the item dispenser, and

a fault having two states; and

a controller in electrical communications with the item dispenser and the fault store, the controller

switching the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and

producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

**2**. The item dispensing system of claim **1** wherein the controller produces an alarm in response to detecting the first state of the fault.

3. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a bill acceptor adapted to accept bills,

a fault store which stores

a fault threshold representing a stored number smaller than a number of bills storable in the bill acceptor, and

a fault being switchable to a first state in response to the bill acceptor storing a number of bills at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the bill acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

4. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a coin acceptor adapted to accept coins,

a fault store which stores

a fault threshold representing a stored number smaller than a number of coins storable in the coin acceptor, and

a fault being switchable to a first state in response to the coin acceptor storing a number of coins at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the coin acceptor, the controller producing an alarm generated in response to detecting only a deterioration of the fualt; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

5. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a cash acceptor,

a fault store for storing which stores

a fault threshold representing a stored value smaller than a desired total cash value to be stored in the cash acceptor, and

a fault being switchable to a first state in response to the cash acceptor storing a total cash value at least equal to the stored value; and

a controller in electrical communications with the item dispenser, the fault store and the cash acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

6. The item dispensing system of claim 5 further comprising a printer in electrical communications with the controller.

7. The item dispensing system of claim 5 wherein the controller produces an alarm in response to detecting the first state of the fault.

8. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

first and second fault thresholds representing respective first and second numbers smaller than a number of items dispensable by first and second item dispensers, respectively, and

first and second faults being switchable to a first state in response to the first and second item dispensers dispensing a number of items at least equal to the first and second numbers, respectively, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting only a deterioration of both of the first and second fault states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

9. The item dispensing system of claim 8 wherein the controller produces the alarm in response to the first and second faults being switched to their respective first and second fault states.

10. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores

a plurality of fault thresholds, each fault threshold representing a first number smaller than a maximum number of items dispensable by a respective item dispenser, and

a plurality of faults, each fault being switchable to a respective first state in response to a respective item dispenser dispensing a number of items at least equal to the first number, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting a predetermined number of the faults being switched to deteriorated states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

11. The item dispensing system of claim 10 wherein the controller produces the alarm in response to the predetermined number of the faults being switched to their respective first states.

12. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores a fault threshold and a fault; and

a controller which independently operates the item dispenser and providing data relating to items dispensed by the item dispenser, the controller being in electrical communications with the item dispenser and the fault store, and the controller producing an alarm in response to detecting a change of state of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm and the data relating to items dispensed by the item dispensers from the controller; and

another computer located geographically remotely from the retail locations and the host computer, the other computer in electrical communications with the host computer for receiving data relating to items dispensed at one of the retail locations.

13. The item dispensing system of claim 12 wherein the controller produces an alarm in response to detecting a deterioration of the fault.

14. The item dispensing system of claim 12 further comprising a fault store for storing

a fault threshold representing an operating state of the item dispenser, and

a fault having two states.

15. The item dispensing system of claim 14 wherein the controller

switches the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and

produces the alarm in response to detecting only a deterioration of the fault.

16. The item dispensing system of claim 15 wherein the controller produces the alarm in response to detecting the first state of the fault.

* * * * *

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| APPLICATION NUMBER | FILING OR 371 (c) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 09/661,211 | 09/14/2000 | Joseph C. Perin Jr. | INLO-20A |

**CONFIRMATION NO. 1542**

*OC000000018789008*

26646
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

Date Mailed: 05/15/2006

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/21/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

DAVID O LIPSCOMB
OIPE (703) 308-9010

ATTORNEY/APPLICANT COPY

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| APPLICATION NUMBER | FILING OR 371 (c) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 09/661,211 | 09/14/2000 | Joseph C. Perin Jr. | INLO-20A |

**CONFIRMATION NO. 1542**

*OC000000018788976*

C Richard Eby
Wood Herron & Evans LLP
2700 Carew Tower
441 Vine Street
Cincinnati, OH 45202-2917

Date Mailed: 05/15/2006

## NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/21/2005.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

DAVID O LIPSCOMB
OIPE (703) 308-9010

NEW ATTORNEY/AGENT COPY

Title: ITEM DISPENSING SYSTEM NETWORK Matter: 10604 Client: 12406 Application No: 09/661211 (P40768B US 0 56933)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

| TRANSMITTAL LETTER FOR POWER OF ATTORNEY BY ASSIGNEE and 3.73(b) STATEMENT | | Docket Number: 12406/10604 | |
|---|---|---|---|
| Application Number 09/661,211 | Filing Date September 14, 2000 | Examiner Joseph A. DILLON JR. | Art Unit 3651 |
| Patent Number 6,356,794 | Issue Date March 12, 2002 | | |
| Invention Title ITEM DISPENSING SYSTEM NETWORK | | Inventor(s) PERIN JR. et al. | |

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. box 1450, Alexandria, VA 22313-1450 on:
Date: Oct. 18, 2005 Reg. No. 47,893
Signature: _____
Andrew L. Reibman

SIR:

Transmitted herewith for filing in the above-identified patent application is a copy of a Power of Attorney by Assignee of Entire Interest, attached hereto as **Exhibit A**. In accordance with MPEP 324 and 37 C.F.R. 3.73 (b) the following statement and attached documents show the assignee's title to the present application.

Applicants submit a Statement under 37 C.F.R. 3.73 (b), attached hereto as **Exhibit B**, executed by the attorney of record on October 18, 2005, certifying that **GTECH CORPORATION**, is the assignee of the entire right, title and interest in the above-mentioned patent application.

An Assignment executed by the inventors, Joseph C. PERIN JR. and David G. WAGONER assigning the above-captioned application to Interlott Technologies Inc., was recorded on September 14, 2000 at Reel 011093, Frame 0665.

A Merger document was executed by GTECH Corporation on December 1, 2003, which merges Interlott Technologies, Inc. with and into GTECH Corporation. The Merger was recorded on March 12, 2004 at Reel 015083, Frame 0870. Accordingly, GTECH Corporation is the owner of the entire right, title and interest in, to and under the invention described and claimed in the above-identified patent application.

Dated: Oct. 18, 2005 By: _____
Andrew L. Reibman (Reg. No. 47,893)

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**CUSTOMER NO. 26646**

# EXHIBIT A

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

| **POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST (REVOCATION OF PRIOR POWERS AND APPOINTMENT OF NEW POWER)** | | Docket Number: **12406/10604** | |
|---|---|---|---|
| Application Number **09/661,211** | Filing Date September 14, 2000 | Examiner Joseph A. DILLON JR. | Art Unit **3651** |
| Patent Number **6,356,794** | Issue Date **March 12, 2002** | | |
| Invention Title ITEM DISPENSING SYSTEM NETWORK | | Inventor(s) Joseph PERIN JR. et al. | |

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

All powers of attorney previously given are hereby revoked and the following attorneys and/or agents are hereby appointed to prosecute and transact all business in the Patent and Trademark Office connected therewith:
**Thomas J. Meloro (Reg. No. 33,538)**
**Andrew L. Reibman (Reg. No. 47,893)**
SEND CORRESPONDENCE, AND DIRECT TELEPHONE CALLS TO:

**Andrew L. Reibman, Esq.**
**KENYON & KENYON**
**One Broadway**
**New York, New York 10004**
**(212) 425-7200 (phone)**
**(212) 425-5288 (facsimile)**
**CUSTOMER NO. 26646**

The undersigned is authorized to execute this document on behalf of the applicant:

**GTECH Corporation**

Date: 10/11/05, 2005

By: _____
Name: Michael Prescott
Title: Deputy General Counsel
Vice President

# EXHIBIT B

# U.S. DEPARTMENT OF COMMERCE
# PATENT AND TRADEMARK OFFICE

| STATEMENT UNDER 37 C.F.R. 3.73(b) | | Docket Number: 12406/10604 | |
|---|---|---|---|
| Application Number<br>**09/661,211** | Filing Date<br>**September 14, 2000** | Examiner<br>**Joseph A. DILLON JR.** | Art Unit<br>**3651** |
| Patent Number<br>**6,356,794** | Issue Date<br>**March 12, 2002** | | |
| Invention Title<br>**ITEM DISPENSING SYSTEM NETWORK** | | Inventor(s)<br>**Joseph C. PERIN JR. et al.** | |

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandra, VA 22313-1450

GTECH Rhode Island Corporation, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of:

[X ] A chain of title from the inventors of the patent application identified above, to the current assignee as shown below:

1. From Joseph C. PERIN JR. and David G. WAGONER to INTERLOTT TECHNOLOGIES, INC. The document was recorded in the United States Patent and Trademark Office on September 14, 2000 at Reel 011093, Frame 0665.

2. From INTERLOTT TECHNOLOGIES, INC to GTECH CORPORATION. . The document was recorded in the United States Patent and Trademark Office on March 12, 2004 at Reel 015083, Frame 0870.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

Date : 

Name : Andrew L. Reibman

Title : Attorney of Record (Reg. No. 47,893)

Signature : Oct. 18, 2005

Telephone Number: (212) 425-6486

App. Serial No.: 09/661,211 Client/Matter: INLO-20A
Issue No.: 6,356,794 Doc. No.: 46,051-01

Please place the official stamp of the Patent and Trademark Office on this card and return it to constitute acknowledgment/receipt of the document(s) listed below by the Patent and Trademark Office on the date stamped.

| | |
|---|---|
| Applicant(s): | Perin, et al. |
| Filing date: | September 14, 2000 |
| Issue date: | March 12, 2002 |
| Title: | **ITEM DISPENSING SYSTEM NETWORK** |

Enclosures: **Letter Making Errors of Record; Postcard**

Attorney: KRH
Date: May 16, 2002

**WOOD, HERRON & EVANS, L.L.P.**

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on May 16, 2002

Keith R. Haupt, Reg. No. 37,638 — Date: May 16, 2002

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Patent No.: | 6,356,794 |
| Issue Date: | March 12, 2002 |
| Applicant: | Joseph C. Perin, Jr., David G. Wagoner |
| Art Unit: | 3651 |
| Examiner: | Joseph A. Dillon, Jr. |
| For: | ITEM DISPENSING SYSTEM NETWORK |
| Atty Docket: | INLO-20A |

Assistant Commissioner for Patents
Washington, DC 20231

May 16, 2002

Sir:

**LETTER MAKING ERRORS OF RECORD**

In reviewing the above-identified issued patent, applicant/patentee has noted specific errors in the patent related to a typographical/grammatical nature. Applicant/patentee submits that such errors are of a minor character, occurred in good faith, do not require a Certificate of Correction, do not involve new matter nor require reexamination. Applicant wanted to place this letter in the file of the above-identified patent application for the purposes of documenting them.

The errors of this type identified in the patent are as follows:

Title Page, Abstract "A method or operating" should read --A method of operating--.

Column 2, Line 49 "system being equal one of" should read --system being equal to one of--.

Column 2, Line 50 "A alarm is ..." should read --An alarm is--.

Column 2, Line 64 "and a deterioration of the state of the state of the fault" should read --and a deterioration of the state of the fault--.

Column 2, Line 66 "the deterioration of the state of the state of the fault" should read --the deterioration of the state of the fault--.

Column 3, Line 8 "However alarms based on nonfatal faults is avoided" should read --However, alarms based on nonfatal faults are avoided--.

Column 3, Line 29 "has a significantly less burden" should read --has significantly less burden--.

Column 3, Line 65 "embodiment of the invention that by which alarms are" should read --embodiment of the invention by which alarms are--.

Column 8, Line 1 "and the LED's on" should read --and the LEDs on--.

Column 8, line 55 "last weeks report" should read --last week's report--

.

Column 9, Line 4 "for a date rollover, If" should read --for a date rollover. If--.

Column 10, Line 63 "when the retailer module 38 detects that the acknowledgment to the dispense command" should read --when the retailer module 38 detects the acknowledgment of the dispense command--.

Column 11, Line 34 "to choose different preselected number," should read --to choose a different preselected number--.

Column 11, Line 54 "module 438" should read --module 38--.

Column 12, Line 25 "sales by the shift by the day," should read --sales by the shift, by the day,--.

Column 12, Line 53 "terminal 33 FIG.2)" should read --terminal 33 (FIG.2)--.

Column 13, Line 10 "there is no intention to restrict nor in any way" should read --there is no intention to restrict or in any way--.

Column 13, Line 43 "The system disclosed in FIGS. 1 and 2 provide" should read --The system disclosed in FIGS. 1 and 2 provides--.

Column 13, Line 53 "the item dispensing system 29 may installed in" should read --the item dispensing system 29 may be installed in--.

Column 14, Line 50 "to appropriate ones of the of the item" should read --to appropriate ones of the item--.

Column 16, Line 3 "or the plurality of host computers may connected" should read --or the plurality of host computers may be connected--.

Column 17, Line 59 "and sets an 'ID Update'" should read --and sets "ID Update"--.

Column 19, Line 27 "to appropriate ones of the of the item" should read --to appropriate ones of the item--.

Column 22, Line 43 "The current state of the faults" should read --The current states of the faults--.

Column 24, Line 23 "to generate and alarm" should read --to generate an alarm--.

Column 26, Line 14 "faut table" should read --fault table--.

Column 26, Line 54 "Therefore, In the" should read --Therefore, in the--.

Column 27, Line 65 "Applicant" should read --Applicants--.

Column 28, Line 32 "is an inefficient user of" should read --is an inefficient use of--.

Respectfully submitted,

By: _____
Keith R. Haupt, Reg. No. 37,638

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202
PH: (513) 241-2324
FX: (513) 421-7269

App. Serial No.: 09/661,211
Issue No.: 6,356,794

Client/Matter: INLO-20A
Doc. No.: 46,051-01

Please place the official stamp of the Patent and Trademark Office on this card and return it to constitute acknowledgment/receipt of the document(s) listed below by the Patent and Trademark Office on the date stamped.

| | |
|---|---|
| Applicant(s): | Perin, et al. |
| Filing date: | September 14, 2000 |
| Issue date: | March 12, 2002 |
| Title: | **ITEM DISPENSING SYSTEM NETWORK** |
| Enclosures: | **Request for Certificate of Correction; Substitute Form PTO 76-22; Postcard** |

Attorney KRH
Date May 16, 2002

**WOOD, HERRON & EVANS, L.L.P.**

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231 on May 16, 2002

Keith R. Haupt, Reg. No. 37,638

May 16, 2002
Date

**PATENT**

Patent Number: 6,356,794
Issued: March 12, 2002
Patentee: Joseph C. Perin, Jr. and David G. Wagoner
Title: ITEM DISPENSING SYSTEM NETWORK

Cincinnati, Ohio Date: May 16, 2002

Assistant Commissioner for Patents
Washington, D.C. 20231

**ATTENTION: DECISION AND CERTIFICATE OF CORRECTION BRANCH OF THE PATENT ISSUE DIVISION**

Sir:

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT FOR PTO MISTAKE (37 CFR 1.322(a))

It is noted that errors appear in the above-identified patent of a clerical/typographical nature on the part of the U.S. Patent and Trademark Office.

In accordance with the procedure for handling such certificates, enclosed herewith please find substitute form PTO 76-22 in duplicate. A certificate of correction is respectfully requested.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By
Keith R. Haupt
Reg. No. 37,638

2700 Carew Tower
Cincinnati, OH 45202
(513) 241-2324
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UNITED STATES PATENT AND TRADEMARK OFFICE

# CERTIFICATE OF CORRECTION

PATENT NO. : 6,356,794

DATED : March 12, 2002

INVENTOR(S) : Joseph C. Perin, Jr. and David G. Wagoner

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 29, claim 5, please delete "a fault store for storing which stores" and replace with --a fault store which stores--.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

MAILING ADDRESS OF SENDER:

PATENT NO. 6,356,794
@ 50¢ per page

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower, 441 Vine Street
Cincinnati, Ohio 45202
SUBSTITUTE FORM PTO76-22

Application Serial No. 09/661,211 Docket No. 46,051-01
( INLO-20A )

Please place the official stamp of the Patent Office on this card and return it to constitute acknowledgment by the Patent Office of receipt on the date stamped.

Inventor: Perin et al.

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

Enclosures: Issue Fee Transmittal; Certificate of Mailing
Check for $655.00
Postcard

Attorney: CRE
Date: November 26, 2001 WOOD, HERRON & EVANS, L.L.P.

PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with applicable fees, to: **Box ISSUE FEE**
**Assistant Commissioner for Patents**
**Washington, D.C. 20231**

***MAILING INSTRUCTIONS:*** This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

PM82/0911

C RICHARD EBY
WOOD HERRON & EVANS LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI OH 45202-2917

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

**Certificate of Mailing**

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

C. Richard Eby, Esq. (Depositor's name)

(Signature)

11/26/01 (Date)

| APPLICATION NO. | FILING DATE | TOTAL CLAIMS | EXAMINER AND GROUP ART UNIT | DATE MAILED |
|---|---|---|---|---|
| 09/661,211 | 09/14/00 | 016 | DILLON JR, J 3651 | 09/11/01 |

First Named Applicant: PERIN JR., 35 USC 154(b) term ext. = 0 Days.

TITLE OF INVENTION: ITEM DISPENSING SYSTEM NETWORK

| ATTY'S DOCKET NO. | CLASS-SUBCLASS | BATCH NO. | APPLN. TYPE | SMALL ENTITY | FEE DUE | DATE DUE |
|---|---|---|---|---|---|---|
| 2 INLO-20A | 700-078.000 | L30 | UTILITY | YES | $620.00 | 12/11/01 |

1. Change of correspondence address or indication of " Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Wood, Herron & Evans L.L.P.
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
**PLEASE NOTE:** Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropiate when an assignment has been previously recorded by the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Interlott Technologies, Inc.

(B) RESIDENCE: (CITY & STATE OR COUNTRY)
Mason, Ohio

Please check the appropriate assignee category indicated below (will not be printed on the patent)
☐ individual X corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):
XX Fee
XX Advance Order - # of Copies 5

4b. The following fees or deficiency in the fees should be charged to:
DEPOSIT ACCOUNT NUMBER 23-3000
(ENCLOSE AN EXTRA COPY OF THIS FORM)
X Issue Fee
☐ Advance Order - # of Copies _____

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature) (Date) 11/26/01

NOTE; The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

***Burden Hour Statement:*** This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



TRANSMIT THIS FORM WITH FEE

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 09/661,211 | 09/14/00 | PERIN JR. J | INLO-20A |

PM11/1108

C RICHARD EBY
WOOD HERRON & EVANS LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI OH 45202-2917

| EXAMINER | |
|---|---|
| DILLON JR, J | |
| **ART UNIT** | **PAPER NUMBER** |
| 3651 | 10 |

DATE MAILED: 11/08/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

| Interview Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/611,211 | OKAMOTO ET AL. | |
| | Examiner | Art Unit | |
| | Joseph A. Dillon, Jr. | 3651 | |

All participants (applicant, applicant's representative, PTO personnel):

(1) *Joseph A. Dillon, Jr.*. (3)_____.

(2) *C. Richard Eby*. (4)_____.

Date of Interview: _____ .

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☒ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____ .

Claim(s) discussed: *None* .

Identification of prior art discussed: *None* .

Agreement with respect to the claims f)☒ was reached. g)☐ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *This second post allowance discussion also focused on the examiner's Reasons for Allowance. The examiner reviewed the applicant's rebuttal remarks of record and indicated a genereal concurrance with the applicant's position. The telephone call was made more to confirm that the examiner is still of the opinion that the applicant's invention distinguishes over the art of record* .

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i)☒ It is not necessary for applicant to provide a separate record of the substance of the interview(if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

_____
Examiner's signature, if required

## Summary of Record of Interview Requirem s

**Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record**
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

**Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews**
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

---

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case unless both applicant and examiner agree that the examiner will record same. Where the examiner agrees to record the substance of the interview, or when it is adequately recorded on the Form or in an attachment to the Form, the examiner should check the appropriate box at the bottom of the Form which informs the applicant that the submission of a separate record of the substance of the interview as a supplement to the Form is not required.

It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

**Examiner to Check for Accuracy**

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

***. ********** -CC JOURNAL- ********** DATE SEP-28-20( **** TIME 09:59 *********

MODE = MEMORY TRANSMISSION START=SEP-28 09:57 END=SEP-28 09:59

FILE NO.=941

| STN NO. | COMM. | ONE-TOUCH/ ABBR NO. | STATION NAME/EMAIL ADDRESS/TELEPHONE NO. | PAGES | DURATION |
|---|---|---|---|---|---|
| 001 | OK | # | 17033057687 | 004/004 | 00:01:32 |

-WOOD,HERRON AND EVANS -

********** - ***** - **********

**CERTIFICATE OF FACSIMILE TRANSMISSION**

I hereby certify that a total of **4 pages** of correspondence for Serial No. 09/661,211 is being facsimile transmitted to the Assistant Commissioner for Patents, Examining Group 3651, fax number 703-305-7687, on September 28, 2001.

Transmittal with Certificate of Facsimile Transmission (1 page)
Comments on Statement for Reasons for Allowance (3 pages)

C. Richard Eby, Reg. No. 25,854 — Date 9/28/01

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Serial No: | 09/661,211 |
| Applicant: | Joseph C. Perin, Jr., David G. Wagoner |
| Filed: | September 14, 2000 |
| Art Unit: | 3651 |
| **Batch No.:** | **L90** |
| **Allowance Dated:** | **September 11, 2001** |
| Examiner: | Joseph A. Dillon, Jr. |
| For: | ITEM DISPENSING SYSTEM NETWORK |
| Atty Docket: | INLO-20A |

Box: ISSUE FEE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

**TRANSMITTAL**

Transmitted herewith are Comments on Statement for Reasons for Allowance in reply to the Notice of Allowance dated September 11, 2001. Applicant is a small entity; and further, Applicant believes that there is no fee or extension of time required. If any fee is required, please charge Deposit Account No. 23-3000.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By: C. Richard Eby, Reg. No. 25,854

2700 Carew Tower
441 Vine Street
Cincinnati, Ohio 45202
PH: (513) 241-2324
FX: (513) 421-7269

## CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that a total of **4 pages** of correspondence for Serial No. 09/661,211 is being facsimile transmitted to the Assistant Commissioner for Patents, Examining Group 3651, fax number 703-305-7687, on September 28, 2001.

Transmittal with Certificate of Facsimile Transmission (1 page)
Comments on Statement for Reasons for Allowance (3 pages)

C. Richard Eby, Reg. No. 25,854 — Date 9/28/01

**PATENT**

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Atty Docket: | INLO-20A |

Box: ISSUE FEE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

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Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By: C. Richard Eby, Reg. No. 25,854

2700 Carew Tower
441 Vine Street
Cincinnati, Ohio 45202
PH: (513) 241-2324
FX: (513) 421-7269

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| Serial No: | 09/661,211 |
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| For: | ITEM DISPENSING SYSTEM NETWORK |
| Atty Docket: | INLO-20A |

Box: ISSUE FEE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

**COMMENTS ON STATEMENT FOR REASONS FOR ALLOWANCE**

These comments are being filed in response to Paragraph 3 of a Notice of Allowability that is attached to a Notice of Allowance dated September 11, 2001. Paragraph 3 recites the examiner's statement of reasons for allowance.

In Paragraph 3, the examiner takes the position that the term "electrical communications" is taken to mean hard wired as opposed to radio frequency. Applicants submit that such a position is contrary to the clear meaning of "electrical communications" as used in the claims and supported by the specification.

Claims 27, 28, 31, 32 and 36 each recite that a retailer computer 151 is in "electrical communications" with the processors 145 of the item dispensers 149. As shown in Fig. 8, the retailer computer 151 is connected to the processors 145 of the item dispensers 149 by a line 150. The line 150 is described at page 24, lines 19-23, as "a wired or wireless bidirectional communications link 150 that conforms to the communications port on each of the item dispensers 149." Further, the communications port is further described at page 23, lines 12-16, as being implementable using a wired or wireless technology, such as RF.

Claims 27, 31, 32, 36 and 38 each recite that a host computer 161 is in "electrical communications" with a retailer computer 151. As shown in Fig. 8, the host computer 161 is connected to the retailer computer 151 by a line 160a. Claims 26, 29 and 30 each recite that a host computer 161 is in "electrical communications" with the processors 145 of the item dispensers 149. As shown in Fig. 8, the host computer 161 is connected to the processors 145 by a line 160b. At page 23, lines 11-16, the line 160 is described as "a wired or wireless bidirectional communications link." Further, at page 25, lines 20-30, the lines 160a and 160b are described as a bidirectional communications link. The description of the communications links 160 continues at page 26, lines 1-11 as follows:

> As will be appreciated, any type and combination of communications links may be established between the various retailer locations 147 and the host computer 161. The choice of a configuration of one, or a combination of, communications links will depend on many factors such as the availability of different communications resources, their respective costs, etc. Such communications links may be a commercial telephone link, an Internet link, a cable link, a satellite link, etc. The selection of a communications link configuration and the frequency of data transmissions to the host computer will also depend on previously described factors, for example, the number of item dispensers 149 at a location, their level of activity, the requirements of the retailer and the state authority, etc.

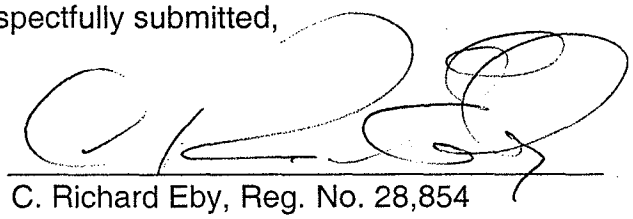
Claims 26, 28-33, 35, 38 and 39 each substantively recite that one other computer 171 is in "electrical communications" with the host computer 161. As shown in Fig. 8, the other computer 171 is connected to the host computer 161 by a line 170. The line 170 is described at page 23, lines 16-19, as a bidirectional communications link 170. Further, at page 26, lines 17-21, the specification explains that "the choice of a communication link configuration between the host computer 161 and the state computer 171 will depend on many of the same factors previously described with

respect to the communications link 160", that is, the factors recited at page 26 lines 1-11 and quoted above.

Applicants submit that there is nothing in the specification to support the position taken in the examiner's statement for reasons of allowance that the term "electrical communications" means a hardwired communications link as opposed to a radio frequency communications link. Applicants further submit that the specification clearly and unambiguously supports a meaning for "electrical communications" that includes both wired and wireless bidirectional communications links; and the language in the claims is entitled to such a meaning. Therefore, Applicants respectfully request that the limited meaning of the term "electrical communications" be removed from the examiner's statement of reasons for allowance.

In view of the above, it is submitted that the claims remaining in the application are patentably distinct and allowable over the references. Reconsideration of the rejection is requested, and favorable action is respectfully solicited. The Examiner is invited to call the undersigned should any questions arise.

Respectfully submitted,

By: 

C. Richard Eby, Reg. No. 28,854

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202
PH: (513) 241-2324, Ext. 292
FX: (513) 421-7269

Application Serial No. 09/661,211 Docket No. 46,051-01
( INLO-20A )

Please place the official stamp of the Patent Office on this card and return it to constitute acknowledgment by the Patent Office of receipt on the date stamped.

Inventor: Perin et al.

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

Enclosures: Comments on Statement for Reasons for Allowance
Certificate of Mailing
Postcard

Attorney: CRE
Date: September 28, 2001 WOOD, HERRON & EVANS, L.L.P.

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box: ISSUE FEE, Assistant Commissioner for Patents, Washington, D.C. 20231 on September 28, 2001.

C. Richard Eby, Reg. No. 25,854 Date 9/28/01

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Serial No: | 09/661,211 |
| Applicant: | Joseph C. Perin, Jr., David G. Wagoner |
| Filed: | September 14, 2000 |
| Art Unit: | 3651 |
| **Batch No.:** | **L90** |
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| Examiner: | Joseph A. Dillon, Jr. |
| For: | ITEM DISPENSING SYSTEM NETWORK |
| Atty Docket: | INLO-20A |

Box: ISSUE FEE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

**COMMENTS ON STATEMENT FOR REASONS FOR ALLOWANCE**

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Claims 27, 28, 31, 32 and 36 each recite that a retailer computer 151 is in "electrical communications" with the processors 145 of the item dispensers 149. As shown in Fig. 8, the retailer computer 151 is connected to the processors 145 of the item dispensers 149 by a line 150. The line 150 is described at page 24, lines 19-23, as "a wired or wireless bidirectional communications link 150 that conforms to the communications port on each of the item dispensers 149." Further, the communications port is further described at page 23, lines 12-16, as being implementable using a wired or wireless technology, such as RF.

Claims 27, 31, 32, 36 and 38 each recite that a host computer 161 is in "electrical communications" with a retailer computer 151. As shown in Fig. 8, the host computer 161 is connected to the retailer computer 151 by a line 160a. Claims 26, 29 and 30 each recite that a host computer 161 is in "electrical communications" with the processors 145 of the item dispensers 149. As shown in Fig. 8, the host computer 161 is connected to the processors 145 by a line 160b. At page 23, lines 11-16, the line 160 is described as "a wired or wireless bidirectional communications link." Further, at page 25, lines 20-30, the lines 160a and 160b are described as a bidirectional communications link. The description of the communications links 160 continues at page 26, lines 1-11 as follows:

> As will be appreciated, any type and combination of communications links may be established between the various retailer locations 147 and the host computer 161. The choice of a configuration of one, or a combination of, communications links will depend on many factors such as the availability of different communications resources, their respective costs, etc. Such communications links may be a commercial telephone link, an Internet link, a cable link, a satellite link, etc. The selection of a communications link configuration and the frequency of data transmissions to the host computer will also depend on previously described factors, for example, the number of item dispensers 149 at a location, their level of activity, the requirements of the retailer and the state authority, etc.

Claims 26, 28-33, 35, 38 and 39 each substantively recite that one other computer 171 is in "electrical communications" with the host computer 161. As shown in Fig. 8, the other computer 171 is connected to the host computer 161 by a line 170. The line 170 is described at page 23, lines 16-19, as a bidirectional communications link 170. Further, at page 26, lines 17-21, the specification explains that "the choice of a communication link configuration between the host computer 161 and the state computer 171 will depend on many of the same factors previously described with

respect to the communications link 160", that is, the factors recited at page 26 lines 1-11 and quoted above.

Applicants submit that there is nothing in the specification to support the position taken in the examiner's statement for reasons of allowance that the term "electrical communications" means a hardwired communications link as opposed to a radio frequency communications link. Applicants further submit that the specification clearly and unambiguously supports a meaning for "electrical communications" that includes both wired and wireless bidirectional communications links; and the language in the claims is entitled to such a meaning. Therefore, Applicants respectfully request that the limited meaning of the term "electrical communications" be removed from the examiner's statement of reasons for allowance.

In view of the above, it is submitted that the claims remaining in the application are patentably distinct and allowable over the references. Reconsideration of the rejection is requested, and favorable action is respectfully solicited. The Examiner is invited to call the undersigned should any questions arise.

Respectfully submitted,

By: _____
C. Richard Eby, Reg. No. 28,854

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202
PH: (513) 241-2324, Ext. 292
FX: (513) 421-7269

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

# NOTICE OF ALLOWANCE AND ISSUE FEE DUE

PM82/0911

C RICHARD EBY
WOOD HERRON & EVANS LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI OH 45202-2917

| APPLICATION NO. | FILING DATE | TOTAL CLAIMS | EXAMINER AND GROUP ART UNIT | DATE MAILED |
|---|---|---|---|---|
| 09/661,211 | 09/14/00 | 016 | DILLON JR, J 3651 | 09/11/01 |
| First Named Applicant | PERIN JR., | | 35 USC 154(b) term ext. = 0 Days. | |

TITLE OF INVENTION ITEM DISPENSING SYSTEM NETWORK

| ATTY'S DOCKET NO. | CLASS-SUBCLASS | BATCH NO. | APPLN. TYPE | SMALL ENTITY | FEE DUE | DATE DUE |
|---|---|---|---|---|---|---|
| 2 INLO-20A | 700-078.000 | L90 | UTILITY | YES | $620.00 | 12/11/01 |

***THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.***

***THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.***

## *HOW TO RESPOND TO THIS NOTICE:*

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

***IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.***

YOUR COPY

| Notice of Allowability | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/661,211 | PERIN JR. ET AL. | |
| | Examiner | Art Unit | |
| | Joseph A. Dillon, Jr. | 3651 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/30/01*.
2. ☒ The allowed claim(s) is/are *32-47*.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). 9-11-01
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
   (a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

8. ☐ CORRECTED DRAWINGS must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No. ____.
   (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
   (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.**

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1☐ Notice of References Cited (PTO-892)
2☐ Notice of Informal Patent Application (PTO-152)
3☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
4☐ Interview Summary (PTO-413), Paper No.____ .
5☐ Information Disclosure Statements (PTO-1449), Paper No. ____.
6☒ Examiner's Amendment/Comment
7☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
8☒ Examiner's Statement of Reasons for Allowance
9☐ Other .

## EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with C. Richard Eby on 9/10/01.

2. The application has been amended as follows:

Claim(s) 32, line(s) 4, "for storing" has been replaced by --which stores--;

Claim(s) 34, line(s) 5, "for storing" has been replaced by --which stores--;

Claim(s) 37, line(s) 5, "for storing" has been replaced by --which stores--;

line(s) 13, "the first state" has been replaced by --only a deterioration--;

Claim(s) 38, line(s) 5, "for storing" has been replaced by --which stores--;

line(s) 13, "the first state" has been replaced by --only a deterioration--;

Claim(s) 39, line(s) 4, "for storing" has been replaced by --which stores--;

Claim(s) 41, line(s) 4, "for storing" has been replaced by --which stores--;

Claim(s) 43, line(s) 4, "for storing" has been replaced by --which stores--;

line(s) 5, "for independently operating" has been replaced by --which independently operates--.

3. The following is an examiner's statement of reasons for allowance:

The applicant's claimed invention of an item dispensing system comprising a plurality of dispensers comprising a controller & fault store, and a host computer which

produces an alarm in response to detecting only the deterioration of a fault was neither disclosed or suggested by the prior art.

The examiner takes the following position regarding the particulars of claim(s) language:

- The applicant's invention dispenses items, that is to say discrete articles as opposed to a liquid or bulk granulate.
- All dispensers are at some "retail location", that is to say a point-of-sale.
- Those claim(s) containing the phrase "processors for independently operating" have this as a positively recited limitation pursuant to the applicant's remarks of 8/2/01 in Paper No. 4. Accordingly, each dispenser is operative for stand-alone dispensing action.
- The term "electrical communications" is taken to mean hard wired as opposed to radio frequency.
- The term "computer" is as would be taken by one of ordinary skill in the art. A computer is commonly taken to be essentially a digital database. This interpretation precludes a signal processor or a controller employing electro-mechanical conversions from being from being considered a computer in the applicant's claim(s) language.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph A. Dillon, Jr. whose telephone number is (703)305-9728. The examiner can normally be reached on 8-5:30, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (703)308-2560. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7687 for regular communications and (703)308-0552 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1134.

JD

CHRISTOPHER P. ELLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

# Notice of Allowability

| Application No. | Applicant(s) | |
|---|---|---|
| 09/661,211 | PERIN JR. ET AL. | |
| **Examiner** | **Art Unit** | |
| Joseph A. Dillon, Jr. | 3651 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/30/01*.
2. ☒ The allowed claim(s) is/are *32-47*.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

9-11-01

5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
   (a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

8. ☐ CORRECTED DRAWINGS must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No. ____.
   (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
   (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.**

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1☐ Notice of References Cited (PTO-892)
3☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
5☐ Information Disclosure Statements (PTO-1449), Paper No. ____.
7☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
2☐ Notice of Informal Patent Application (PTO-152)
4☐ Interview Summary (PTO-413), Paper No.____ .
6☒ Examiner's Amendment/Comment
8☒ Examiner's Statement of Reasons for Allowance
9☐ Other .

U.S. Department of Commerce Patent and Trademark Office
Assistant Commissioner for Patents

# Fax Cover Sheet

| | |
|---|---|
| Date: 9/10/01 | |
| To: C. Richard Eby | From: Joe Dillon |
| Application/Control Number: 09/513,408 + 661,211 | Art Unit: 3651 |
| Fax No.: (513) 421-7269 | Phone No.: (703) 305-9728 |
| Voice No.: 241-2324 | Return Fax No.: (703) 308-~~0552~~ |
| Re: INLO/19B + 20A | CC: 257C |

☐ Urgent ☒ For Review ☐ For Comment ☒ For Reply ☒ Per Your Request

Comments:

Per telecon conference w/Examiner on 9/10/01 - changes were accepted as noted in claim 37 + 38

Number of pages ___ including this page

INCO-19B

1. The application (09/513,408) has been amended as follows:

✓Claim(s) 26, line(s) 4, "provide" has been replaced by --providing--;

✓Claim(s) 28, line(s) 12, "for receiving and storing" has been replaced by --which receives and stores--;

line(s) 15, "for receiving" has been replaced by --which receives--;

✓Claim(s) 30, line(s) 12, "for receiving" has been replaced by --which receives--;

✓Claim(s) 31, line(s) 22, "for receiving and storing" has been replaced by --which receives and stores--;

✓Claim(s) 32, line(s) 26, "for receiving and storing" has been replaced by --which receives and stores--;

✓Claim(s) 34, line(s) 5, after "customer", --through an input device of a customer unit at a respective point-of-sale counter-- has been inserted;

line(s) 7, after "with", --a respective-- has been inserted;

✓Claim(s) 38, line(s) 19, "for receiving" has been replaced by --which receives--;

line(s) 22, "for receiving" has been replaced by --which receives--.

INCO.20A

1. The application (09/661,211) has been amended as follows:

✓Claim(s) 32, line(s) 4, "for storing" has been replaced by --which stores--;

✓Claim(s) 34, line(s) 5, "for storing" has been replaced by --which stores--;

Claim(s) 37, line(s) 5, "for storing" has been replaced by --which stores--;

line(s) 12, "an" has been replaced by --a first--; "the first state" has been replaced by "only a

line(s) 13, after "fault", --and a second alarm in response to detecting only deterioration

a deterioration of the fault-- has been inserted;

Claim(s) 38, line(s) 5, "for storing" has been replaced by --which stores--;

Same change as in claim 31 ~~line(s) 13, "an" has been replaced by --a first--;~~

~~line(s) 13, after "fault", --and a second alarm in response to detecting only a deterioration of the fault-- has been inserted;~~

Claim(s) 39, line(s) 4, "for storing" has been replaced by --which stores--;

Claim(s) 41, line(s) 4, "for storing" has been replaced by --which stores--;

Claim(s) 43, line(s) 4, "for storing" has been replaced by --which stores--;

line(s) 5, "for independently operating" has been replaced by --which independently operates--.

Application Serial No. 09/661,211 Docket No. 46,051-01
( INLO-20A )

Please place the official stamp of the Patent Office on this card and return it to constitute acknowledgment by the Patent Office of receipt on the date stamped.

Inventor: Perin et al.
Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

Enclosures: Amendment Transmittal; Certificate of Mailing
Amendment and Response; Certificate of Mailing
including attached "version with markings..."
Terminal Disclaimer over a Prior Patent
Terminal Disclaimer over a Pending Second Application
Checks for $55.00 and $55.00
Postcard

Attorney: CRE
Date: July 27, 2001 WOOD, HERRON & EVANS, L.L.P.

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box: AMENDMENT-FEE Assistant Commissioner for Patents, Washington, D.C. 20231 on July 27, 2001.

C. Richard Eby, Reg. No. 25,854 Date 7/27/01

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Serial No: | 09/661,211 |
| Applicant: | Joseph Perin, Jr., David G. Wagoner |
| Filed: | September 14, 2000 |
| Art Unit: | 3651 |
| Examiner: | Joseph A. Dillon, Jr. |
| For: | ITEM DISPENSING SYSTEM NETWORK AND METHOD |
| Atty Docket: | INLO-20A |

Box: AMENDMENT-FEE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

**AMENDMENT TRANSMITTAL**

Transmitted herewith is: **1)** an Amendment and Response in reply to the Office Action dated April 27, 2001; **2)** version with markings to show changes made; **3)** Terminal Disclaimer to Obviate a Double Patenting Rejection Over a Prior Patent; **4)** Terminal Disclaimer to Obviate a Double Patenting Rejection Over a Pending Second Application; and **5)** checks in the amount of $55.00 and $55.00 for the required Terminal Disclaimer fees. Applicant is a small entity; and further, Applicant believes that there is no additional fee for claims or extension of time required. If any additional extension and/or fee is required, please charge Deposit Account No. 23-3000.

Respectfully submitted,

By: _____
C. Richard Eby, Reg. No. 28,854

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202
PH: (513) 241-2324, Ext. 292
FX: (513) 421-7269

PTO/SB/25 (10-00)
Approved for use 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PENDING SECOND APPLICATION**

Docket No. (optional) INLO-20A

| | |
|---|---|
| In re Application of: | Joseph C. Perin, Jr. and David G. Wagoner |
| Application No: | 09/661,211 |
| Filed | September 14, 2000 |
| Art Unit: | 3651 |
| For: | ITEM DISPENSING SYSTEM NETWORK AND METHOD |

The owner*, Interlott Technologies, Inc. of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. §154 to 156 and 173, as presently shortened by any terminal disclaimer filed prior to the grant of any patent granted on pending second Application Number 09/513,408, filed on February 25, 2000, of any patent on the pending second application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the second application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

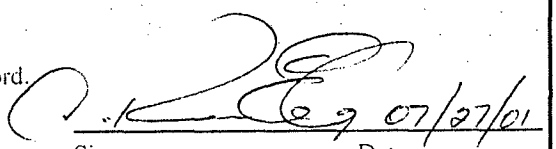
In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §154 to 156 and 173 of any patent granted on the second application, as shortened by any terminal disclaimer filed prior to the patent grant, in the event that any such granted patent: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. §1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

Check Box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of an organization (e.g., corporation, partnership, university, government agency, etc), the undersigned is empowered to act on behalf of the organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

2. ☒ The undersigned is an attorney or agent of record.



Signature Date 07/27/01

C. Richard Eby, Reg. No. 25,854

Typed or printed name

☒ Terminal Disclaimer fee under 37 C.F.R. §1.20(d) included.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

*Statement under 37 C.F.R. §3.73(b) is required if terminal disclaimer is signed by the assignee (owner).

Form PTO/SB/96 may be used for making this certification. See MPEP §324.

PTO/SB/26 (10-00)
Approved for use 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE


**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT**

Docket No. (optional) INLO-20A

| | |
|---|---|
| In re Application of: | Joseph C. Perin, Jr. and David G. Wagoner |
| Application No: | 09/661,211 |
| Filed | September 14, 2000 |
| Art Unit: | 3651 |
| For: | ITEM DISPENSING SYSTEM NETWORK AND METHOD |

The owner*, Interlott Technologies, Inc. of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. §154 to 156 and 173, as presently shortened by any terminal disclaimer, of prior Patent Nos. 5,943,241 and 6,038,492. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

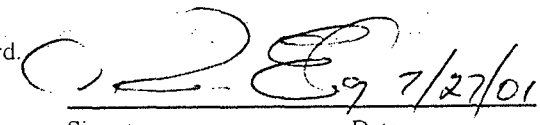
In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §154 to 156 and 173 of the prior patent, as presently shortened by any terminal disclaimer, in the event that is later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. §1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check Box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of an organization (e.g., corporation, partnership, university, government agency, etc), the undersigned is empowered to act on behalf of the organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

2. ☒ The undersigned is an attorney or agent of record.



Signature Date 7/27/01

C. Richard Eby, Reg. No. 25,854

Typed or printed name

☒ Terminal Disclaimer fee under 37 C.F.R. §1.20(d) included.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

*Statement under 37 C.F.R. §3.73(b) is required if terminal disclaimer is signed by the assignee (owner).

Form PTO/SB/96 may be used for making this certification. See MPEP §324.

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box: AMENDMENT-FEE Assistant Commissioner for Patents, Washington, D.C. 20231 on July 27, 2001.

C. Richard Eby, Reg. No. 25,854 — Date 7/27/01

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Serial No: | 09/661,211 |
| Applicant: | Joseph Perin, Jr., David G. Wagoner |
| Filed: | September 14, 2000 |
| Art Unit: | 3651 |
| Examiner: | Joseph A. Dillon, Jr. |
| For: | ITEM DISPENSING SYSTEM NETWORK AND METHOD |
| Atty Docket: | INLO-20A |

Box: AMENDMENT-FEE
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

**AMENDMENT AND RESPONSE**

In response to the Office Action dated April 27, 2001, please amend the above-identified application as follows:

**Please replace the Title with the following**

ITEM DISPENSING SYSTEM NETWORK

**In the Claims**

Cancel claims 1-31 and add the new claims 32-47 as follows:

32. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store for storing

a fault threshold representing an operating state of the item dispenser, and

a fault having two states; and

a controller in electrical communications with the item dispenser and the fault store, the controller

switching the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and

producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

33. The item dispensing system of claim 32 wherein the controller produces an alarm in response to detecting the first state of the fault.

34. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a cash acceptor,

a fault store [for] storing

a fault threshold representing a stored value smaller than a desired total cash value to be stored in the cash acceptor, and

a fault being switchable to a first state in response to the cash acceptor storing a total cash value at least equal to the stored value; and

a controller in electrical communications with the item dispenser, the fault store and the cash acceptor, the controller producing an alarm in response to detecting only a deterioration of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

35. The item dispensing system of claim 34 further comprising a printer in electrical communications with the controller.

36. The item dispensing system of claim 34 wherein the controller produces an alarm in response to detecting the first state of the fault.

37. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a bill acceptor adapted to accept bills,

a fault store [for] storing

a fault threshold representing a stored number smaller than a number of bills storable in the bill acceptor, and

a fault being switchable to a first state in response to the bill acceptor storing a number of bills at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the bill acceptor, the controller producing an alarm in response to detecting [the first state] of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

38. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a coin acceptor adapted to accept coins,

a fault store for storing

a fault threshold representing a stored number smaller than a number of coins storable in the coin acceptor, and

a fault being switchable to a first state in response to the coin acceptor storing a number of coins at least equal to the stored number, and

a controller in electrical communications with the item dispenser, the fault store and the coin acceptor, the controller producing an alarm generated in response to detecting the first state of the fault; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

39. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store for storing

first and second fault thresholds representing respective first and second numbers smaller than a number of items dispensable by first and second item dispensers, respectively, and

first and second faults being switchable to a first state in response to the first and second item dispensers dispensing a number of items at least equal to the first and second numbers, respectively, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting only a deterioration of both of the first and second fault states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

40. The item dispensing system of claim 39 wherein the controller produces the alarm in response to the first and second faults being switched to their respective first and second fault states.

41. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store which stores for storing

a plurality of fault thresholds, each fault threshold representing a first number smaller than a maximum number of items dispensable by a respective item dispenser, and

a plurality of faults, each fault being switchable to a respective first state in response to a respective item dispenser dispensing a number of items at least equal to the first number, and

a controller in electrical communications with the item dispenser and the fault store, the controller producing an alarm in response to detecting a predetermined number of the faults being switched to deteriorated states; and

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm from, the controller.

42. The item dispensing system of claim 41 wherein the controller produces the alarm in response to the predetermined number of the faults being switched to their respective first states.

43. An item dispensing system comprising:

a plurality of item dispensers located at different retail locations, each of the item dispensers comprising

a fault store for storing a fault threshold and a fault; and

a controller for independently operating the item dispenser and providing data relating to items dispensed by the item dispenser, the controller being in electrical communications with the item dispenser and the fault store, and the controller producing an alarm in response to detecting a change of state of the fault;

a host computer located geographically remotely from the retail locations, the host computer being in electrical communications with, and receiving the alarm and the data relating to items dispensed by the item dispensers from the controller; and

another computer located geographically remotely from the retail locations and the host computer, the other computer in electrical communications with the host computer for receiving data relating to items dispensed at one of the retail locations.

44. The item dispensing system of claim 43 wherein the controller produces an alarm in response to detecting a deterioration of the fault.

45. The item dispensing system of claim 43 further comprising a fault store for storing

a fault threshold representing an operating state of the item dispenser, and

a fault having two states.

46. The item dispensing system of claim 45 wherein the controller switches the fault to a first state in response to detecting the operating state of the item dispenser represented by the fault threshold, and produces the alarm in response to detecting only a deterioration of the fault.

47. The item dispensing system of claim 46 wherein the controller produces the alarm in response to detecting the first state of the fault.

**Remarks**

Applicants have canceled claims 1-31, added new claims 32-47 and claims 32-47 remain in the application. Reconsideration and reexamination of the application as amended are respectfully requested.

Applicants hereby confirm their election of Group I, claims 1-10 for examination.

Claims 1-10 are rejected under the judicially created Doctrine of Obvious-type double patenting as being unpatentable over claim 1-18 of U.S. Patent No. 5,943,241 and over claims 1-7 of U.S. Patent No. 6,038,492. Applicants are submitting herewith a Terminal Disclaimer with respect to those patents; and therefore, Applicants submit that the rejection should be withdrawn.

Claims 1-10 are provisionally rejected under the judicially created Doctrine of Double Patenting over claims 1-31 of copending application Serial No. 09/661,211. Applicants are submitting herewith a Terminal Disclaimer with respect to that application; and therefore, Applicants submit that the rejection should be withdrawn.

New claims 32, 33 relate to an item dispensing system and recites an item dispenser with a fault store and a controller. The fault store stores a fault threshold representing an operating state of the item dispenser and a fault having two states. The fault is switched to a first state by the controller in response to the operating state represented by the fault threshold being detected. The controller produces an alarm in response to only a deterioration of the fault. Thus, the creation of alarms is limited to only those necessary, and redundant alarms are not sent to the host computer. That feature is described at page 38, lines 17-30.

New claims 34-36 relate to an item dispensing system and recites an item dispenser with a cash acceptor, a fault store and a controller. The fault store stores a fault threshold representing a value less than the cash value storable in the cash acceptor. The fault store further stores a fault that is switchable to a first state in response to the cash acceptor storing a cash value at least equal to the stored threshold value. Upon detecting a deterioration of

the fault, the controller in the item dispenser provides an alarm that is subsequently transmitted to a host computer located geographically remotely from the item dispenser. New claims 37 and 38 recite similar item dispensing systems that have a coin acceptor and cash acceptor, respectively.

New claims 39-42 relate to an item dispensing system in which an alarm is produced in response to a composite fault, that is, a combination of at least two faults, as described at page 40, lines 7-31. Again, each of a plurality of item dispensers has a fault store for storing a plurality of fault thresholds and respective faults. Each fault threshold represents a number of items dispensable from a respective item dispenser less than a maximum. Each fault is switchable to a first state in response to a respective item dispenser dispensing a number of items represented by a respective fault threshold. A controller provides an alarm in response to detecting a deterioration of two or more faults, that is, the faults being switched to the first state; and the alarm is subsequently provided to a remotely located host computer.

New claims 43-47 relate to an item dispensing system and recites an item dispenser with a controller connected to a fault store that stores a fault threshold and a fault. The controller independently operates the item dispenser and provides data relating to items dispensed by the item dispenser. A host computer is located geographically remotely from the retail locations, receives the alarm and receives the data relating to items dispensed by the item dispensers from the controller. Another computer is located geographically remotely from the retail locations and the host computer and receives data relating to items dispensed at one of the retail locations.

Claims 1-2, 5, 7-10 are rejected under 35 U.S.C. §102(b) as being anticipated by Wichter et al. (U.S. Patent No. 5,608,643). Wichter et al. relates to a system for managing multiple dispensing units. The system includes a plurality of dispensing units 10 operable to transmit and receive information through a network to a dispensing unit controller system 14. Each dispensing unit 10 has a controller 26 that monitors reference level sensors 24, status sensors 28 and a user interface 30 to track product inventory in bins 20. Status

sensors 28 are coupled to the physical subsystem of the dispensing unit 10 and monitor conditions throughout the dispensing unit 10. Status sensors 28 monitor such conditions as temperature, power level, backup power level, vending of product, dispensing unit door open, an exact change state, etc. Reference level sensors 24 provide a plurality of reference points relating to inventory thresholds within the bins 20. Thus, the controller 26 is able to track the operating status and product sold from each of the bins. The controller 26 can also store downloaded control and threshold parameters transmitted from the dispensing unit controller system 14. Controller 26 monitors conditions in the dispensing unit 10 through reference level sensors 24 and status sensors 28 by comparing the sensed conditions to threshold levels held by controller 26. When a threshold is exceeded, controller 26 transmits a status message to dispensing unit controller system 14 identifying the event that has occurred.

Claims 32-33 distinguish over Wichter et al. because Wichter et al. does not create an alarm in response to only a deterioration of a fault. Wichter et al. creates a status signal that is transferred to the controller system 14 in response to a threshold being exceeded, col. 7, lines 46-51. Applicants submit that Wichter et al. does not disclose the use of a separate and independent fault and an alarm. Applicants utilize a separate fault and alarm so that the creation of an alarm can be independently controlled as a function of one or more faults. Further, an alarm is most efficiently created in response to only a deterioration of a fault, and even though a fault may remain in a deteriorated state over a period of time, the alarm is created and sent to the host computer only once.

Claims 34-38 are distinguishable from Wichter et al. because Wichter et al. does not utilize threshold values in the monitoring of cash taken in by the item dispensing system. In Wichter et al., at col. 5, lines 36-42, the data interface 22 is used to track sales information from a coin mechanism. Wichter et al is also capable of determining when the coin mechanism is in an "exact change" state. Wichter et al. has no disclosure known to Applicants that relates to the use of threshold values to anticipate when the cash/coinage in the

dispensing system reaches a preset value that makes removal of the cash desirable.

Claims 39-42 are distinguishable from Wichter et al. because Wichter et al. does not utilize composite faults, that is, the generation of an alarm only in response to the occurrence of two or more faults. Such a feature is made possible by the separation of an alarm from a fault state. The use of composite faults is helpful in reducing the number of alarms and unnecessary servicing of the item dispenser.

Claims 43-47 are distinguishable from Wichter et al. because Wichter et al. does not use separate alarms that are created as a function of fault states, nor does Wichter et al. have a third computer level that monitors the data relating to items dispensed.

In view of the above-recited distinctions, Applicants submit that claims 32-47 are patentable and not anticipated under 35 U.S.C. §102 by Wichter et al.

Applicants submit that there is no disclosure in Wichter et al. that neither expresses, suggests or motivates one to use both fault states and alarms, nor create an alarm in response to only a deterioration of a fault state, or use another computer connected to the host computer for receiving data relating to the items dispensed. Therefore, Applicants submit that claims 32-47 are patentable and not obvious under 35 U.S.C. §103 in view of Wichter et al.

Attached hereto is a marked-up version of the changes made to the application by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

In view of the above, it is submitted that the claims remaining in the application are patentably distinct and allowable over the references. Reconsideration of the rejection is requested, and favorable action is respectfully solicited. The Examiner is invited to call the undersigned should any questions arise.

Respectfully submitted,

By: _____
C. Richard Eby, Reg. No. 28,854

WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202
PH: (513) 241-2324, Ext. 292
FX: (513) 421-7269

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

**The Title has been amended as follows:**

ITEM DISPENSING SYSTEM NETWORK [AND METHOD]

**The claims have been amended as follows:**

Claims 1-31 have been canceled.

New claims 32-47 have been added.

hC

**UNITED STATES DEPARTMENT OF COMMERCE**
**United States Patent and Trademark Office**
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 09/661,211 | 09/14/00 | PERIN JR. J | INLO-20A |

| EXAMINER |
|---|
| DILLON JR, J |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3651 | 3 |

PM82/0427

C RICHARD EBY
WOOD HERRON & EVANS LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI OH 45202-2917

**DATE MAILED:** 04/27/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/661,211 | PERIN JR. ET AL. | |
| | Examiner | Art Unit | |
| | Joseph A. Dillon, Jr. | 3651 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 September 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *11-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-10, drawn to a dispensing system, classified in class 700, subclass 232.

   II. Claim 11, drawn to a method of monitoring a dispenser, classified in class 702, subclass 33.

   III. Claims 12-31, drawn to a method of dispensing, classified in class 700, subclass 244.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case both the process as claimed can be practiced by another materially different apparatus and the apparatus as claimed can be used to practice another and materially different process. The method is directed to the monitoring of the reliability of the dispenser system itself.

3. Inventions III and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be

practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case both the process as claimed can be practiced by another materially different apparatus and the apparatus as claimed can be used to practice another and materially different process. The method combination claim(s) 28 differs from the apparatus combination claim(s) 8 in that the method involves a cash transaction.

4. Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as a method of distributed control. See MPEP § 806.05(d).

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with C. Richard Eby on 4/9/01 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 5,943,241 and over claims 1-7 of U.S. Patent No. 6,038,492. Although the conflicting claims are not identical, they are not patentably distinct from each other because to put

a plurality of independent systems under distributed control would be obvious to one of ordinary skill in the art.

10. Claims 1-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 09/513,408. Although the conflicting claims are not identical, they are not patentably distinct from each other because having a register to monitor operating conditions which toggle an alarm flag in an inoperative state would be obvious to one of ordinary skill.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-2, 5, 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Wichter et al.

With regard to claim(s) 1 & 8, Wichter et al. discloses a dispensing network comprising a computer, a communication link connected to said computer, a plurality of dispensing systems, Figure(s) 1, connected to said link and having a dispenser 10, a controller 26 & a fault store 28, Figure(s) 2.

With regard to claim(s) 2-7 & 9, Wichter et al. discloses toggling an alarm flag, column 1, line(s) 36.

With regard to claim(s) 5 & 7, Wichter et al. discloses collecting money, first two paragraphs.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wichter et al.

With regard to claim(s) 3 & 4, these features are either inherent to Wichter et al. or it would be obvious to provide them. This claimed subject matter is elementary data reduction.

It would have been obvious to modify Wichter et al. to substitute data reduction techniques in order to maintain system operation.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph A. Dillon, Jr. whose telephone number is

(703)305-9728. The examiner can normally be reached on 8-5:30, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (703)308-2560. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7687 for regular communications and (703)308-0552 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1134.

CHRISTOPHER P. ELLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

| Notice of References Cited | Application/Control . . 09/661,211 | Applicant(s)/Patent Under Reexamination PERIN JR. ET AL. | |
|---|---|---|---|
| | Examiner Joseph A. Dillon, Jr. | Art Unit 3651 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification | |
|---|---|---|---|---|---|---|
| | A | US-5,608,643- | 03-1997 | Wichter et al. | 364 | 479.14 |
| | B | US-6,181,981-B1 | 01-2001 | Varga et al. | 700 | 236 |
| | C | US-5,912,818- | 06-1999 | McGrady et al. | 364 | 479.02 |
| | D | US-5,983,197- | 11-1999 | Enta | 705 | 16 |
| | E | US-5,339,250- | 08-1994 | Durbin | 364 | 479 |
| | F | US-5,997,170- | 12-1999 | Brodbeck | 364 | 479.06 |
| | G | US-4,412,292- | 10-1983 | Sedam et al. | 364 | 479 |
| | H | US-5,282,127- | 01-1994 | Mii | 364 | 130 |
| | I | US-5,963,452- | 10-1999 | Etoh et al. | 364 | 479.06 |
| | J | US-4,107,777- | 08-1978 | Pearson et al. | 364 | 465 |
| | K | US-5,924,077- | 07-1999 | Beach et al. | 705 | 10 |
| | L | US- - | | | | |
| | M | US- - | | | | |

**FOREIGN PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification | |
|---|---|---|---|---|---|---|---|
| | N | - - | | | | | |
| | O | - - | | | | | |
| | P | - - | | | | | |
| | Q | - - | | | | | |
| | R | - - | | | | | |
| | S | - - | | | | | |
| | T | - - | | | | | |

**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Sheet 1 (A) of 3

SUBSTITUTE FORM PTO-1449 (MODIFIED)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

(37 CFR 1.98(b))

| ATTY. DOCKET NO. | SERIAL NO. |
|---|---|
| INLO/20A | 09/661,211 |
| APPLICANT: Perin et al. | |
| FILING DATE: September 14, 2000 | GROUP: 3651 |

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TO 3600 MAIL ROOM

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | PATENT NUMBER | ISSUE DATE | PATENTEE | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|---|
| | A.A | 1,979,613 | 11/1934 | Goggins | | | |
| | A.B | 3,140,094 | 7/1964 | Wallace | | | |
| | A.C | 3,892,948 | 7/1975 | Constable | | | |
| | A.D | 4,186,308 | 1/1980 | Fleischer et al. | | | |
| | A.E | 4,247,998 | 1/1981 | Schiller et al. | | | |
| | A.F | 4,473,843 | 9/1984 | Behl | | | |
| | A.G | 4,589,096 | 5/1986 | Endo et al. | | | |
| | A.H | 4,654,799 | 3/1987 | Ogaki et al. | | | |
| | A.I | 4,695,954 | 9/1987 | Rose et al. | | | |
| | A.J | 4,785,969 | 11/1988 | McLaughlin | | | |
| | A.K | 4,821,164 | 4/1989 | Schafer | | | |

FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

| | | DOCUMENT NUMBER | PUBLICATION DATE | COUNTRY OR PATENT OFFICE | CLASS | SUBCLASS | TRANSLATION (YES/NO) |
|---|---|---|---|---|---|---|---|
| | A.L | WO 99/46695 | 16 Sep. 99 | PCT | | | |
| | A.M | | | | | | |
| | A.N | | | | | | |
| | A.O | | | | | | |
| | A.P | | | | | | |
| | A.Q | | | | | | |

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

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| | A.R | |
| | A.S | |
| | A.T | |

EXAMINER: J Dillon

DATE CONSIDERED: 4/18/01

EXAMINER: Initial if citation considered, whether or not in conformance. Draw line through citation only if not in conformance and not considered. Include a copy of this form with next communication to applicant.

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

| ATTY. DOCKET NO. | SERIAL NO. |
|---|---|
| INLO/20A | 09/661,211 |
| APPLICANT: Perin et al. | |
| FILING DATE: September 14, 2000 | GROUP: 3651 |

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

(37 CFR 1.98(b))





U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | PATENT NUMBER | ISSUE DATE | PATENTEE | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|---|
| | B.A | 4847764 | 7/1989 | Halvorson | | | |
| | B.B | 4858806 | 8/1989 | Schafer | | | |
| | B.C | 4982337 | 1/1991 | Burr et al. | | | |
| | B.D | 4995507 | 2/1991 | Schafer | | | |
| | B.E | 5100038 | 3/1992 | Schafer | | | |
| | B.F | 5111939 | 5/1992 | Schafer | | | |
| | B.G | 5128862 | 7/1992 | Mueller | | | |
| | B.H | 5207368 | 5/1993 | Wilfong, Jr. et al. | | | |
| | B.I | 5229749 | 7/1993 | Yenglin | | | |
| | B.J | 5399905 | 3/1995 | Schafer | | | |
| | B.K | 5492398 | 2/1996 | Schafer | | | |

FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

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|---|---|---|---|---|---|---|---|
| | B.L | | | | | | |
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

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| | B.S | |
| | B.T | |

| EXAMINER | DATE CONSIDERED |
|---|---|
| | 4/18/01 |

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...UTE FORM PTO-1449 ...DIFIED)

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PATENT AND TRADEMARK OFFICE

DEC 27 ... PATENT & TRADEMARK OFFICE

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(Use several sheets if necessary)

(37 CFR 1.98(b))

| ATTY. DOCKET NO. | SERIAL NO. |
|---|---|
| INLO/20A | 09/661,211 |
| APPLICANT: Perin et al. | |
| FILING DATE: September 14, 2000 | GROUP: 3651 |

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | PATENT NUMBER | ISSUE DATE | PATENTEE | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|---|
| JN | C.A | 5,663,887 | 9/1997 | Warn et al. | | | |
| | C.B | 5,694,326 | 12/1997 | Warn et al. | | | |
| | C.C | 5,761,071 | 6/1998 | Bernstein et al. | | | |
| | C.D | 5,819,199 | 10/1998 | Cox | | | |
| ✓ | C.E | 5,927,540 | 7/1999 | Stoken et al. | | | |
| ✓ | C.F | 5,943,241 | 8/1999 | Nichols et al. | | | |
| ✓ | C.G | 6,038,492 | 3/2000 | Nichols et al. | | | |
| | C.H | D319,264 | 8/1991 | Schafer | | | |
| JN | C.I | D329,287 | 9/1992 | Schafer | | | |
| | C.J | | | | | | |
| | C.K | | | | | | |

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FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

| | | DOCUMENT NUMBER | PUBLICATION DATE | COUNTRY OR PATENT OFFICE | CLASS | SUBCLASS | TRANSLATION (YES/NO) |
|---|---|---|---|---|---|---|---|
| | C.L | | | | | | |
| | C.M | | | | | | |
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| | C.Q | | | | | | |

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

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| | C.R | |
| | C.S | |
| | C.T | |

| EXAMINER | DATE CONSIDERED |
|---|---|
| JN | 4/18/01 |

EXAMINER: Initial if citation considered, whether or not in conformance. Draw line through citation only if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Application Serial No. 09/661,211

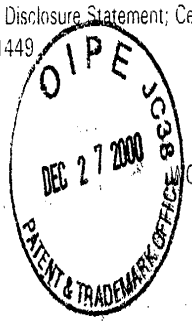
Docket No. 46,051-01
( INLO-20A )

Please place the official stamp of the Patent Office on this card and return it to constitute acknowledgment by the Patent Office of receipt on the date stamped.

Inventor: Perin et al.

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

Enclosures: Information Disclosure Statement; Certificate of Mailing
PTO Form 1449
Postcard




Attorney: CRE
Date: December 15, 2000

WOOD, HERRON & EVANS, L.L.P.

Application Serial No. 09/661,211 Docket No. 46.051-01
( INLO-20A )

Please place the official stamp of the Patent Office on this card and return it to constitute acknowledgment by the Patent Office of receipt on the date stamped.

Inventor: Perin et al.

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

Enclosures: Information Disclosure Statement; Certificate of Mailing
PTO Form 1449
Postcard

Attorney: CRE
Date: December 15, 2000 WOOD, HERRON & EVANS, L.L.P.

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on December 15, 2000.

C. Richard Eby, Reg. No. 25,854 — Date 12/15/2000

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Serial No: | 09/661,211 |
| Filing Date: | September 14, 2000 |
| Art Unit: | 3651 |
| Applicant: | Joseph C. Perin, Jr. et al. |
| Title: | ITEM DISPENSING SYSTEM NETWORK AND METHOD |
| Atty Docket: | INLO-20A |

Cincinnati, Ohio — December 15, 2000

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

**INFORMATION DISCLOSURE STATEMENT**

In accordance with the duty of candor and good faith imposed by 37 CFR §1.56 and means of complying therewith according to 37 CFR §§1.97 and 1.98, the references listed on the attached PTO-1449 are called to the attention of the United States Patent and Trademark Office in connection with the above-identified patent application. No copies of the listed references are enclosed as this application claims the benefit of Serial No. **60/225,148**, filed on August 14, 2000; which is a Continuation-In-Part of Serial No. **09/513,408**, filed on February 25, 2000; which is a Continuation-In-Part of Serial No. **09/325,082**, filed on June 3, 1999, now Patent No. 6,038,492; which is a Division of Serial No. **09/039,073**, filed on March 13, 1998, now Patent No. 5,943,021. However, if the Examiner does not have access to the above-identified files, Applicant's attorney would be happy to submit additional copies. Applicant wishes to have the cited references

considered in this application and printed on the first page of any patent issuing on this application.

No admission is made that the cited art represents the prior art or that the cited art is the most material art.

Applicant submits that none of the cited references alone or in combination disclose or render obvious the subject matter in the present invention. The Examiner is urged to consider the cited references and to make an independent decision with respect to their materiality.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By _____
C. Richard Eby, Reg. No. 25,854

2700 Carew Tower
Cincinnati, Ohio 45202-2917
PH: (513) 241-2324
FX: (513) 421-7269

| SUBSTITUTE FORM PTO-1449 (MODIFIED) | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO. INLO/20A | SERIAL NO. 09/661,211 |
|---|---|---|---|
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b)) | | APPLICANT Perin et al. | |
| | | FILING DATE September 14, 2000 | GROUP 3651 |

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | PATENT NUMBER | ISSUE DATE | PATENTEE | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|---|
| | A.A | 1 9 7 9 6 1 3 | 11/1934 | Goggins | | | |
| | A.B | 3 1 4 0 0 0 9 | 7/1964 | Wallace | | | |
| | A.C | 3 8 9 2 9 4 8 | 7/1975 | Constable | | | |
| | A.D | 4 1 8 6 3 8 1 | 1/1980 | Fleischer et al. | | | |
| | A.E | 4 2 4 7 8 9 9 | 1/1981 | Schiller et al. | | | |
| | A.F | 4 4 7 3 8 8 4 | 9/1984 | Behl | | | |
| | A.G | 4 5 8 9 0 6 9 | 5/1986 | Endo et al. | | | |
| | A.H | 4 6 5 4 7 9 9 | 3/1987 | Ogaki et al. | | | |
| | A.I | 4 6 9 5 9 5 4 | 9/1987 | Rose et al. | | | |
| | A.J | 4 7 8 5 9 6 9 | 11/1988 | McLaughlin | | | |
| | A.K | 4 8 2 1 6 4 2 | 4/1989 | Schafer | | | |

FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

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|---|---|---|---|---|---|---|---|
| | A.L | WO 99/46695 | 16 Sep. 99 | PCT | | | |
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|---|---|---|---|
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| | B.A | 4847764 | 7/1989 | Halvorson | | | |
| | B.B | 4885806 | 8/1989 | Schafer | | | |
| | B.C | 4982337 | 1/1991 | Burr et al. | | | |
| | B.D | 4995507 | 2/1991 | Schafer | | | |
| | B.E | 5100038 | 3/1992 | Schafer | | | |
| | B.F | 5111939 | 5/1992 | Schafer | | | |
| | B.G | 5128862 | 7/1992 | Mueller | | | |
| | B.H | 5207368 | 5/1993 | Wilfong, Jr. et al. | | | |
| | B.I | 5229749 | 7/1993 | Yenglin | | | |
| | B.J | 5390500 | 3/1995 | Schafer | | | |
| | B.K | 5492398 | 2/1996 | Schafer | | | |

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U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | PATENT NUMBER | ISSUE DATE | PATENTEE | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|---|
| | C.A | 5 6 6 3 8 8 7 | 9/1997 | Warn et al. | | | |
| | C.B | 5 6 9 4 3 2 6 | 12/1997 | Warn et al. | | | |
| | C.C | 5 7 6 1 0 7 1 | 6/1998 | Bernstein et al. | | | |
| | C.D | 5 8 1 9 9 8 1 | 10/1998 | Cox | | | |
| | C.E | 5 9 2 7 5 4 1 | 7/1999 | Stoken et al. | | | |
| | C.F | 5 9 4 3 2 4 1 | 8/1999 | Nichols et al. | | | |
| | C.G | 6 0 3 8 4 9 2 | 3/2000 | Nichols et al. | | | |
| | C.H | D 3 1 9 2 6 4 | 8/1991 | Schafer | | | |
| | C.I | D 3 2 9 8 7 7 | 9/1992 | Schafer | | | |
| | C.J | | | | | | |
| | C.K | | | | | | |

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UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

| APPLICATION NUMBER | FILING DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | DRAWINGS | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|---|
| 09/661,211 | 09/14/2000 | 3651 | 600 | INLO-20A | 12 | 31 | 7 |

**FILING RECEIPT**

*OC000000005532601*

C Richard Eby
Wood Herron & Evans LLP
2700 Carew Tower
441 Vine Street
Cincinnati, OH 45202-2917

Date Mailed: 11/06/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

**Applicant(s)**

Joseph C. Perin Jr., Cincinnati, OH ;
David G. Wagoner, Loveland, OH ;

**Continuing Data as Claimed by Applicant**

THIS APPLN CLAIMS BENEFIT OF 60/225,148
WHICH IS A CIP OF 09/513,408 02/25/2000
WHICH IS A CIP OF 09/325,082 06/03/1999 PAT 6,038,492
WHICH IS A DIV OF 09/039,073 03/13/1998 PAT 5,943,241

**Foreign Applications**

**If Required, Foreign Filing License Granted** 11/04/2000

**** SMALL ENTITY ****

**Title**

Item dispensing system network and method

**Preliminary Class**

700

**Data entry by :** TYSON, LASHONNAH **Team :** OIPE **Date:** 11/06/2000

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- The title may be truncated if it consists of more than 600 characters (letters and spaces combined).
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Washington, D.C. 20231

NOVEMBER 13, 2000

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WOOD, HERRON & EVANS, L.L.P.
C. RICHARD EBY, ESQ.
2700 CAREW TOWER
CINCINNATI, OH 45202

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RECORDATION DATE: 09/14/2000

REEL/FRAME: 011093/0665
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
PERIN, JOSEPH C., JR.

DOC DATE: 09/12/2000

ASSIGNOR:
WAGONER, DAVID G.

DOC DATE: 09/12/2000

ASSIGNEE:
INTERLOTT TECHNOLOGIES, INC.
7697 INNOVATION WAY
MASON, OHIO 45040

SERIAL NUMBER: 09661211
PATENT NUMBER:

FILING DATE: 09/14/2000
ISSUE DATE:

JOANN STEWART, EXAMINER
ASSIGNMENT DIVISION
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**PATENTS ONLY** 9-14-00

US Department of Commerce
Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): Joseph C. Perin, Jr., David G. Wagoner
Additional name(s) of conveying party(ies) attached? **NO**



2. Name and Address of receiving party(ies):

**Interlott Technologies, Inc.**, 7697 Innovation Way, Mason, Ohio 45040

Additional name(s) and address(es) attached? ___ Yes X No

3. Nature of Conveyance:

X **Assignment** ___ Merger ___ Security Agreement ___ Change of Name

___ Other _____ Execution Date: **September 12, 2000**

4. Application number(s) or patent number(s): 09/661211

If this document is being filed together with a new application, the execution date of the application is **September 12, 2000**.

| A. Patent Application No.(s) | B. Patent No.(s) |
|---|---|
| **Express Mail #EL699956626US Filed September 14, 2000** | 09-26-2000 101470181 |

Additional numbers attached? ___ Yes X No

5. Name and Address of party to whom correspondence concerning document should be mailed:

C. Richard Eby, Esq.
WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41):..... **$40.00**

X Enclosed X Any deficiencies Authorized to be charged to **Deposit Account No. 23-3000.**

09/25/2000 DNGUYEN 00000808 09661211
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8. Statement and signature: To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

C. Richard Eby, Esq. Reg. No. 25,854 — Signature — 9/14/2000 Date

Total number of pages including cover sheet, attachments and documents: 3

Attorney Docket No. INLO-20A

# ASSIGNMENT OF INVENTION

WHEREAS, I, as a below named inventor, residing at the address stated next to my name, am a sole or joint inventor as indicated below, of certain new and useful improvements in ITEM DISPENSING SYSTEM NETWORK AND METHOD.

AND WHEREAS, Interlott Technologies, Inc., an Ohio corporation with offices at 7697 Innovation Way, Mason, Ohio 45040, (hereinafter referenced as ASSIGNEE) is desirous of acquiring all interest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar legal protection which may be granted therefor in the United States and in any and all foreign countries.

NOW, THEREFORE, in consideration of the sum of One Dollar ($1.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I, as a sole or joint inventor as indicated below, by these presents do hereby assign, sell and transfer unto the said ASSIGNEE, its successors, assigns, and legal representatives, the entire right, title and interest in the said invention, said application, including any divisions and continuations thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to any and all priority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and to any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue the said United States Letters Patent to said ASSIGNEE, as the assignees of the whole right, title and interest thereto.

And I further agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEE or its designee, as ASSIGNEE or its successors, assigns and legal representatives may from time-to-time present to me and without further remuneration, in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of the United States and countries foreign thereto.

And I further agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for application for foreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid invention, as the ASSIGNEE thereof shall hereafter require and prepare at its own expense.

And I further agree that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto.

And I hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with the assignment and sale.

This assignment executed on the dates indicated below.

IN WITNESS WHEREOF, I hereto set my hand this 12th day of September, 2000.

Joseph C. Perin, Jr.

STATE OF OHIO :
:ss.
COUNTY OF HAMILTON :

Before me this 12th day of Sept., 2000, personally appeared Joseph C. Perin, Jr., a citizen of U.S. residing in Cincinnati, Ohio 45213 and particularly at 6479 Grand Vista, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he executed the same as his free act and deed for the purposes therein contained.

Notary Public

[Notary's Seal Here] My Commission Expires:

KEITH R. HAUPT, Attorney at Law
Notary Public, State of Ohio
My Commission Has No Expiration Date
Section 147.03

IN WITNESS WHEREOF, I hereto set my hand this 12th day of Sept., 2000.

David G. Wagoner

STATE OF OHIO :
:ss.
COUNTY OF HAMILTON :

Before me this 12th day of Sept., 2000, personally appeared David G. Wagoner, a citizen of U.S. residing in Loveland, Ohio 45140 and particularly at 9614 Waterford Place, #310, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he executed the same as his free act and deed for the purposes therein contained.

Notary Public

[Notary's Seal Here] My Commission Expires:

KEITH R. HAUPT, Attorney at Law
Notary Public, State of Ohio
My Commission Has No Expiration Date
Section 147.03

# POST OFFICE TO ADDRESSEE

EXPRESS MAIL
UNITED STATES POSTAL SERVICE™

*EL699956626US*

EL699956626US

Customer Copy
Label 11-F July 1997

**SEE REVERSE SIDE FOR SERVICE GUARANTEE AND LIMITS ON INSURANCE COVERAGE**

**ORIGIN (POSTAL USE ONLY)**

| | | |
|---|---|---|
| PO ZIP Code: 45201 | Day of Delivery: ☐ Next ☐ Second | Flat Rate Envelope: ☐ |
| Date In: 9 14 00 (Mo. Day Year) | ☐ 12 Noon ☐ 3 PM | Postage: $ 15.75 |
| Time In: 1655 ☐ AM ☐ PM | Military: ☐ 2nd Day ☐ 3rd Day | Return Receipt Fee |
| Weight: 1 lbs. 0 oz | Int'l Alpha Country Code | COD Fee / Insurance Fee |
| No Delivery: ☐ Weekend ☐ Holiday | Acceptance Clerk Initials | Total Postage & Fees: $ 15.75 |

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Express Mail Corporate Acct. No.
Federal Agency Acct. No. or Postal Service Acct. No.

☐ WAIVER OF SIGNATURE (Domestic Only): Additional merchandise insurance is void if waiver of signature is requested. I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery.
NO DELIVERY ☐ Weekend ☐ Holiday
Customer Signature

FROM: (PLEASE PRINT) PHONE ( INLO-20A-217 )

WOOD HERRON & EVANS
441 VINE ST STE 2700
CINCINNATI OH 45202-2917

TO: (PLEASE PRINT) PHONE ( )

Box: PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

PRESS HARD. You are making 3 copies. FOR PICKUP OR TRACKING CALL 1-800-222-1811 www.usps.gov EMS

jc905 U.S. PTO 09/661211 09/14/00

Express Mail No.: EL699956626US
Date: September 14, 2000
Atty. Docket: INLO/20A

Applicant: Perin et al.

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

The stamp of the Patent Office hereon, may be taken as acknowledging the receipt, on the date stamped, of the following:

- ☒ Utility Patent Application Transmittal Form (in duplicate) containing Certificate of Mailing By Express Mail Under 37 CFR 1.10.
- ☒ Return Postcard.
- ☒ Utility Patent Application, with: cover sheet, 61 page(s) specification (including 31 total claim(s), of which 7 is(are) independent), and 1 page(s) abstract.
- ☒ Drawings: 12 sheet(s) of formal drawings (14 total figure(s)).
- ☒ An Executed Declaration, Power of Attorney and Petition Form.
- ☒ Assignment to Interlott Technologies, Inc., Recordation Cover Sheet (Form PTO-1595)
- ☒ Verified Statement to Establish Small Entity Status under 37 CFR 1.9 and 1.27.
- ☒ A Check of $600.00 for the filing fee.
- ☒ A Check of $40.00 for the assignment recording fee.

CRE/ah

Wood, Herron & Evans, L.L.P.

**Express Mail No.: EL699956626US** **Atty. Docket: INLO/20A**
**Date: September 14, 2000**

Applicant: Perin et al.

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

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- ☒ Return Postcard.
- ☒ Utility Patent Application, with: cover sheet, 61 page(s) specification (including 31 total claim(s), of which 7 is(are) independent), and 1 page(s) abstract.
- ☒ Drawings: 12 sheet(s) of formal drawings ( 14 total figure(s)).
- ☒ An Executed Declaration, Power of Attorney and Petition Form.
- ☒ Assignment to Interlott Technologies, Inc., Recordation Cover Sheet (Form PTO-1595)
- ☒ Verified Statement to Establish Small Entity Status under 37 CFR 1.9 and 1.27.
- ☒ A Check of $600.00 for the filing fee.
- ☒ A Check of $40.00 for the assignment recording fee.

CRE/ah

Wood, Herron & Evans, L.L.P.

EL699956626US

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket: INLO-20A

Applicant: Joseph C. Perin, Jr., David G. Wagoner

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

---

**CERTIFICATE OF MAILING BY EXPRESS MAIL - 37 CFR 1.10**

'Express Mail' mailing label number: EL699956626US
Date of Deposit: September 14, 2000

I certify that this paper or fee (along with the enclosures noted herein) is being deposited with the United States Postal Service 'Express Mail Post Office to Addressee' service under 37 CFR 1.10 on the above date and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Christina Rodgers

By: Christina Rodgers (person mailing paper)

## UTILITY PATENT APPLICATION TRANSMITTAL

*BOX PATENT APPLICATION*
*Assistant Commissioner for Patents*
*Washington, D.C. 20231*

This is a request for filing, under 37 CFR § 1.53(b), a(n):

- ☐ Original (non-provisional) application.
- ☐ Divisional of prior application Serial No. __, filed on __.
- ☒ **Continuation of prior application Serial No. 60/225,148, filed on August 14, 2000; which is a CIP of 09/513,408, filed on 2/25/2000; which is a CIP of 09/325,082, filed on 6/3/1999, now U.S. Patent No. 6,038,492; which is a Division of 09/039,073, filed on 3/13/1998, now U.S. Patent No. 5,943,241.**
- ☐ Continuation-in-part of prior application Serial No. __, filed on __.

For Divisional and Continuation applications ONLY:

- ☐ Copy of Executed Declaration, Power of Attorney and Petition Form from parent application is enclosed (as noted below in Enclosures).
- ☐ Incorporation by Reference: The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied herewith, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

For all Divisional, Continuation and Continuation-in-part applications:

- ☐ A Small Entity Statement was filed in the prior application, small entity status is still proper and desired.
- ☐ This application is assigned to __ by virtue of an earlier assignment filed in the prior application at Reel __, Frame __.

## PRELIMINARY AMENDMENT/CALCULATION OF FEES

☐ Please cancel claims __ without prejudice, and prior to calculating the fees. __ total claim(s), of which __ is(are) independent, is(are) pending after the amendment.

☐ Please enter the enclosed preliminary amendment identified below prior to calculating the fees. __ total claim(s), of which __ is(are) independent, is(are) pending after the amendment.

☒ **The Fees are Calculated as Follows:**

| Fee: | Number of Claims: | In Excess of: | Extra: | At Rate: | Amount: |
|---|---|---|---|---|---|
| Total Claims | 31 | 20 | 11 | $18 | $198.00 |
| Independent Claims | 7 | 3 | 4 | $78 | $312.00 |
| MULTIPLE DEPENDENT CLAIM FEE | | | | | |
| BASIC FEE | | | | | $690.00 |
| TOTAL OF ABOVE CALCULATIONS | | | | | $1,200.00 |
| REDUCTION BY 50% FOR FILING BY SMALL ENTITY | | | | | $600.00 |
| TOTAL | | | | | $600.00 |

## ENCLOSURES

☒ **Utility Patent Application Transmittal Form (in duplicate) containing Certificate of Mailing By Express Mail Under 37 CFR 1.10.**

☒ **Return Postcard.**

*APPLICATION PAPERS*

☒ **Utility Patent Application, with: cover sheet, _61_ page(s) specification (including _31_ total claim(s), of which _7_ is(are) independent), and _1_ page(s) abstract.**

☒ **Drawings: _12_ sheet(s) of _formal_ drawings (_14_ total figure(s)).**

☐ Microfiche Computer Program (Appendix).

☐ Nucleotide and/or Amino Acid Sequence, including (all are necessary): Computer Readable Copy, Paper Copy (identical to computer copy), and Statement verifying identity of copies.

☒ **An _Executed_ Declaration, Power of Attorney and Petition Form.**

☐ Copy of Executed Declaration, Power of Attorney and Petition Form from prior application identified above.

☐ Certified Copy of priority document(s) identified as attached above.

*ADDITIONAL PAPERS*

☒ **Assignment to _Interlott Technologies, Inc._, Recordation Cover Sheet (Form PTO-1595)**

☒ **Verified Statement to Establish Small Entity Status under 37 CFR 1.9 and 1.27.**

☐ Preliminary Amendment (to be entered prior to calculation of fees)

☐ Information Disclosure Statement, __ sheet(s) Form PTO-1449, __ U.S. Patent Reference(s), __ Foreign Patent Reference(s) and __ Other Reference(s)

☐ Other: __

*CHECKS*

☒ **A Check of _$600.00_ for the filing fee.**

☒ **A Check of _$40.00_ for the assignment recording fee.**

## DEPOSIT ACCOUNT AUTHORIZATION

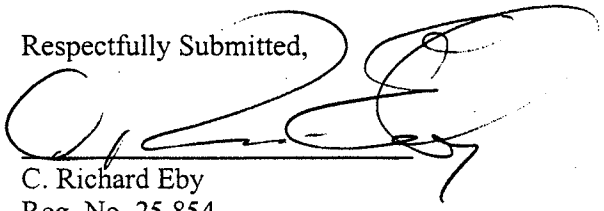
☐ Please charge Deposit Account No. 23-3000 in the amount of __.

☒ **The Commissioner is authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required during the entire pendency of the application, or credit any overpayment, to Deposit Account No. 23-3000 . A duplicate of this transmittal is attached.**

☐ THE PAYMENT OF FEES IS BEING DEFERRED.

---

Respectfully Submitted,



WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202
(513) 241-2324

C. Richard Eby
Reg. No. 25,854

CRE/ah

PTO FORM 1595 RECORDA.C. FORM COVER SHEET
**PATENTS ONLY**

US Department of Commerce
Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): Joseph C. Perin, Jr., David G. Wagoner
Additional name(s) of conveying party(ies) attached? **NO**

2. Name and Address of receiving party(ies):

**Interlott Technologies, Inc.**, 7697 Innovation Way, Mason, Ohio 45040

Additional name(s) and address(es) attached? ___ Yes X No

3. Nature of Conveyance:

X **Assignment** ___ Merger ___ Security Agreement ___ Change of Name

____ Other _____ Execution Date: **September 12, 2000**

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is **September 12, 2000**.

| A. Patent Application No.(s) | B. Patent No.(s) |
|---|---|
| **Express Mail #EL699956626US**<br>**Filed September 14, 2000** | |

Additional numbers attached? ___ Yes X No

5. Name and Address of party to whom correspondence concerning document should be mailed:

C. Richard Eby, Esq.
WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
Cincinnati, Ohio 45202

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41):..... **$40.00**

X Enclosed X Any deficiencies Authorized to be charged to **Deposit Account No. 23-3000.**

DO NOT USE THIS SPACE

8. Statement and signature: To the best of ~~my knowledge and belief~~, the foregoing information is true and correct and any attached copy is a true ~~copy~~ of the original document.

C. Richard Eby, Esq.
Reg. No. 25,854

Signature

9/14/2000
Date

Total number of pages including cover sheet, attachments and documents: 3

Attorney Docket No. INLO-20A

# ASSIGNMENT OF INVENTION

WHEREAS, I, as a below named inventor, residing at the address stated next to my name, am a sole or joint inventor as indicated below, of certain new and useful improvements in ITEM DISPENSING SYSTEM NETWORK AND METHOD.

AND WHEREAS, Interlott Technologies, Inc., an Ohio corporation with offices at 7697 Innovation Way, Mason, Ohio 45040, (hereinafter referenced as ASSIGNEE) is desirous of acquiring all interest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar legal protection which may be granted therefor in the United States and in any and all foreign countries.

NOW, THEREFORE, in consideration of the sum of One Dollar ($1.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I, as a sole or joint inventor as indicated below, by these presents do hereby assign, sell and transfer unto the said ASSIGNEE, its successors, assigns, and legal representatives, the entire right, title and interest in the said invention, said application, including any divisions and continuations thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to any and all priority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and to any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue the said United States Letters Patent to said ASSIGNEE, as the assignees of the whole right, title and interest thereto.

And I further agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEE or its designee, as ASSIGNEE or its successors, assigns and legal representatives may from time-to-time present to me and without further remuneration, in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of the United States and countries foreign thereto.

And I further agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for application for foreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid invention, as the ASSIGNEE thereof shall hereafter require and prepare at its own expense.

And I further agree that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto.

And I hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with the assignment and sale.

This assignment executed on the dates indicated below.

IN WITNESS WHEREOF, I hereto set my hand this 12th day of September, 2000.

Joseph C. Perin, Jr.

STATE OF OHIO :
:ss.
COUNTY OF HAMILTON :

Before me this 12th day of Sept., 2000, personally appeared Joseph C. Perin, Jr., a citizen of U.S. residing in Cincinnati, Ohio 45213 and particularly at 6479 Grand Vista, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he executed the same as his free act and deed for the purposes therein contained.

Notary Public

[Notary's Seal Here] My Commission Expires:

KEITH R. HAUPT, Attorney at Law
Notary Public, State of Ohio
My Commission Has No Expiration Date
Section 147.03

IN WITNESS WHEREOF, I hereto set my hand this 12th day of Sept., 2000.

David G. Wagoner

STATE OF OHIO :
:ss.
COUNTY OF HAMILTON :

Before me this 12th day of Sept., 2000, personally appeared David G. Wagoner, a citizen of U.S. residing in Loveland, Ohio 45140 and particularly at 9614 Waterford Place, #310, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he executed the same as his free act and deed for the purposes therein contained.

Notary Public

[Notary's Seal Here] My Commission Expires:

KEITH R. HAUPT, Attorney at Law
Notary Public, State of Ohio
My Commission Has No Expiration Date
Section 147.03

EXPRESS MAIL NO. EL699956626US

Applicant or Patentee: Interlott Technologies, Inc.
Attorney's Docket No. INLO-20A
Filed or Issued: HEREWITH
For: ITEM DISPENSING SYSTEM NETWORK AND METHOD

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

[ ] the owner of the small business concern identified below:
[X] an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN Interlott Technologies, Inc.
ADDRESS OF CONCERN 7697 Innovation Way, Mason, Ohio 45040

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, on concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled **ITEM DISPENSING SYSTEM NETWORK AND METHOD** by Inventors Joseph C. Perin, Jr. and David G. Wagoner, described in:

[X] the specification filed herewith
[ ] application serial no. _____, filed _____
[ ] patent no. _____, issued _____

If the rights held by the above-identified business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR1.9(d) or a nonprofit organization

under 37 CFR 1.9(e). *Note: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities (37 CFR 1.27).

NAME _____
ADDRESS _____
[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

NAME _____
ADDRESS _____
[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING David F. Nichols
TITLE OF PERSON OTHER THAN OWNER President
ADDRESS OF PERSON SIGNING 7697 Innovation Way, Mason, Ohio 45040

SIGNATURE _____ DATE 9/12/00

EXPRESS MAIL NO. EL699956626US

Attorney Docket No. INLO-20A

# DECLARATION, POWER OF ATTORNEY, AND PETITION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ITEM DISPENSING SYSTEM NETWORK AND METHOD

the specification of which (check one below):

(✔) is attached hereto.

( ) was filed on ___ as Application Serial No. ___ or Express Mail No. ___, and was amended on ___ (if applicable).

( ) was filed on ___ as PCT International Application No. ___ , and as amended under PCT Article 19 on ___ (if any).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s) Priority Claimed?

| (Number) | (Country) | Day/Month/Year Filed | |
|---|---|---|---|
| | | | ( ) Yes ( ) No |
| | | | ( ) Yes ( ) No |
| | | | ( ) Yes ( ) No |

I hereby claim the benefit under Title 35, United States Code, §120 and/or §119(e) of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations §1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

| (Serial No.) | (Filing Date) | (Status: Patented, Pending, or Abandoned) |
|---|---|---|
| 60/225,148 | 08/14/2000 | Pending |
| which is a CIP of: | | |
| 09/513,408 | 02/25/2000 | Pending |
| which is a CIP of: | | |
| 09/325,082 | 6/03/1999 | Patent No. 6,038,492 |
| which is DIVISION of: | | |
| 09/039,073 | 3/13/1998 | Patent No. 5,943,241 |

I hereby appoint John D. Poffenberger (R. No. 20,245), Bruce Tittel (R. No. 22,324), Donald F. Frei (R. No. 21,190), David J. Josephic (R. No. 22,849), A. Ralph Navaro, Jr. (R. No. 23,050), David S. Stallard (R. No. 25,930), J. Robert Chambers (R. No. 25,448), Gregory J. Lunn (R. No. 29,945), Kurt L. Grossman (R. No. 29,799), Clement H. Luken, Jr. (R. No. 32,742), Thomas J. Burger (R. No. 32,662), Gregory F. Ahrens (R. No. 32,957), Wayne L. Jacobs (R. No. 35,553), Kurt A. Summe (R. No. 36,023), Kevin G. Rooney (R. No. 36,330), Keith R. Haupt (R. No. 37,638), Theodore R. Remaklus (R. No. 38,754), Thomas W. Humphrey (R. No. 34,353), Joseph R. Jordan (R. No. 25,686), C. Richard Eby (R. No. 25,854), David E. Pritchard (R. No. 38,273), David H. Brinkman (R. No. 40,532), J. Dwight Poffenberger, Jr. (R. No. 35,324), Beverly A. Lyman (R. No. 41,961), A. Ralph Navaro III (R. No. 46,207), Scott A. Stinebruner (R. No. 38,323), Kristi L. Davidson

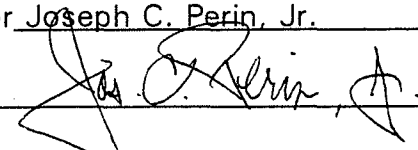
(R. No. 44,643), P. Andrew Blatt (R. No. 44,540), David E. Jefferies (R. No. P-46,800), David E. Franklin (R. No. 39,194), Herbert C. Brinkman (R. No. 16,955), all of Wood, Herron & Evans, L.L.P., 2700 Carew Tower, 441 Vine Street, Cincinnati, OH 45202-2917, telephone no. (513) 241-2324, my attorneys, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. Address all correspondence and telephone calls to

C. Richard Eby
Wood, Herron & Evans, L.L.P.
2700 Carew Tower
441 Vine Street
Cincinnati, OH 45202-2917
Telephone (513) 241-2324

Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of Inventor Joseph C. Perin, Jr.

Inventor's Signature  Date 9-12-00

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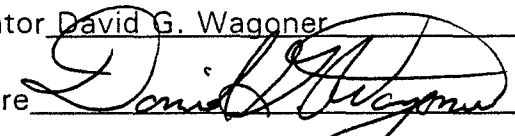
Inventor's Signature  Date 9/12/00

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# ITEM DISPENSING SYSTEM NETWORK AND METHOD

This application is a continuation of a provisional application Serial No. 60/225,148 filed August 14, 2000 which is a continuation-in-part application of U.S. Serial No. 09/513,408 filed on February 25. 2000, for an Item Dispensing System; which is a continuation-in-part application of U.S. Serial No. 09/325,082, filed June 3, 1999, for an Item Dispensing System, now U.S. Patent No. 6,038,492; which is a divisional application of U.S. Serial No. 09/039,073, filed March 13, 1998, for an Item Dispensing System, now U.S. Patent No. 5,943,241.

## Field of the Invention

This invention relates generally to the field of dispensing systems and more particularly, to an improved item dispensing system.

## Background of the Invention

State sponsored lotteries are a popular and accepted method of generating revenue in place of, or in addition to, taxes. One form of lottery uses instant lottery tickets on which number combinations are preprinted before distribution, thereby permitting the player to immediately view the ticket and know whether he/she is a winner. One system of distributing instant lottery tickets is entirely clerical with the tickets being stored in a drawer and counted out by hand. The clerk typically is responsible for keeping track of the number of tickets sold, making redemption payments and providing such sales and payout information to the state. The state then pays the store owner a commission or other monies due. Such a system has the disadvantages of being completely manual and requiring clerical assistance for the entire transaction. Further, the system has no significant security and is susceptible to shrinkage, that is, theft and accounting errors that result in lost revenue and tickets.

Another system for distributing instant lottery tickets is the individual ticket vending machine, which is a stand-alone, unattended automated ticket dispenser. The vending machine accepts the customer's cash or credit card payment and provides a selection of lottery tickets corresponding to the payment. The customer then makes various ticket selections having a value equaling the payment. The vending machine monitors the ticket selections and dispenses the lottery tickets selected by the customer. Such a vending machine has the advantages of not requiring the attention of a clerk, being very secure, and providing a high level of reporting by keeping track of how often the machine is accessed to be loaded and serviced, when and how much money is collected, when and which tickets have been selected, etc. The vending machine may also include a printer for printing reports of machine activity.

While the above vending machine has many advantages over the clerical method of distributing instant lottery tickets, it also has several shortcomings. For example, there are several error conditions which may arise in the normal course of machine operation that should be addressed in a timely manner. For example, the device collecting and counting cash received by the machine may become jammed or otherwise inoperable. The machine may collect and store an amount of cash that is in excess of a desired amount. While such machines have the capability of keeping track of the inventory of lottery tickets, each packet of lottery tickets has a unique identifying indicia, but there is no way of automatically tracking that indicia and hence, those specific tickets, in the automated ticket dispensing process. Further, the programmed control of the ticket dispensing system is constantly being improved; and in any ticket distribution system, there may be thousands of ticket dispensers. Thus, the process of manually providing updated software to each of the ticket dispensers is cumbersome, requires a significant maintenance labor force and relies on personnel who often have limited or no computer experience to properly install and test revisions to the operating software within the ticket dispenser.

Therefore, there is a need to provide a dispensing system that is easier to maintain and provides more information to a central control, so that a more reliable ticket dispensing operation is maintained.

## Summary of the Invention

The present invention provides an item dispensing system that automatically monitors and detects any desired operating conditions. The automation of such item dispensing system diagnosis provides a vastly improved service capability. The item dispensing system network of the present invention provides a distributed system that facilitates the processing, transmission and reporting of diagnostic information relating to the operation of all of the item dispensing systems in the network. The present invention is especially suitable for those installations in which an entity has an obligation of servicing the item dispensing systems.

Within the item dispensing system network of the present invention, each of the item dispensing systems automatically provides a servicing agent with alarms indicating that an item dispensing system has, or will shortly, go out of service. However, each of the item dispensing systems does not automatically provide the servicing agent with alarms if a respective item dispensing system detects a fault that will not lead to an imminent out of service condition. Thus, the item dispensing network of the present invention has the advantage of providing the entity responsible for service only the most important operational states, that is, an existing or imminent out of service condition, so that such entity can most efficiently deploy its service assets.

According to the principles of the present invention in accordance with one described embodiment, an item dispensing system has an item dispenser, a controller in electrical communications with the item dispenser and a fault store for storing fault thresholds and faults. In one aspect of that invention, the fault thresholds represent operating states of the item dispenser, and a true state of a fault is registered in the fault store in response to the operating conditions of the item dispensing system being equal one of the fault

thresholds. A alarm is generated by the controller in response to the fault being registered.

In another embodiment, the invention provides an item dispensing system network having a communications link connected between a computer and the item dispensing system, whereby the alarm is transmitted to the item dispensing system.

In another embodiment of the invention, a method of dispensing items first provides an item dispensing system. A fault threshold is stored, and a fault is registered in response to an operating state of the item dispensing system being equal to the fault threshold. An alarm is generated in response to the fault. In an aspect of this embodiment of the invention, a current state of the fault is compared to a prior state of the fault, and a deterioration of the state of the state of the fault is detected. The alarm is then generated only in response to determining the deterioration of the state of the state of the fault.

The item dispensing system network of the present invention has great flexibility in monitoring the operating states of individual devices within each of the item dispensing systems in the network. First, the present invention has the ability to immediately transfer an alarm to the computer upon the occurrence of a fatal fault, that is, a fault indicating the item dispensing system is out of service. However alarms based on nonfatal faults is avoided, thereby minimizing the occurrence of nuisance alarms and the dispatching of service agents to item dispensing systems that are not out of service. Second, the item dispensing system network of the present invention has the capability of being able to independently tune the creation of faults and alarms for each of the devices within each of the item dispensing systems. Therefore, fault and alarm sensitivity can be adjusted to meet the unique requirements of each item dispensing system.

This capability allows nonfatal faults and alarms to be tuned so that operating states of devices within each item dispensing system which would normally lead to an out of service condition can be tracked. Thus, a potential out of service condition can be anticipated, and the item dispensing system can

be serviced before its occurrence. This operation limits the number of alarms presented to the computer and substantially reduces the load of the computer when it is connected to a large number of item dispensing systems. By performing that function automatically, the user of the computer, who is often responsible for the maintenance of a large number of item dispensing systems, has a significantly less burden. With the above capability, the allocation of service agent assets can be accomplished more rationally, efficiently and cost effectively to the benefit of everyone.

These and other objects and advantages of the present invention will become more readily apparent during the following detailed description taken in conjunction with the drawings herein.

**Brief Description of the Drawings**

Fig. 1 is a partial perspective view of a counter having a ticket dispensing system in accordance with the principles of the present invention.

Fig. 2 is a schematic block diagram of the components of the ticket dispensing system illustrated in Fig 1.

Fig. 3 is a detailed schematic diagram of a retailer access module in accordance with the principles of the present invention.

Fig. 4 is a detailed schematic diagram of a customer access module in accordance with the principles of the present invention.

Fig. 5 is a flow chart illustrating an item dispensing portion of the operation of the retailer access module in accordance with the principles of the present invention.

Fig. 6 is a flow chart illustrating an item dispensing portion of the operation of the customer access module in accordance with the principles of the present invention.

Fig. 7 is a flow chart illustrating an item dispensing portion of the operation of the retailer access module in more detail.

Fig. 8 is a schematic block diagram of another embodiment of the invention that facilitates a reporting function with respect to the item dispenser in accordance with the principles of the present invention.

Fig. 9 is a flow chart of a process executed by a host computer within the embodiment of Fig. 8.

Fig. 10 is a schematic block diagram of a further embodiment of the invention that by which alarms are collected and reported in accordance with the principles of the present invention.

Fig. 11 is a schematic block diagram of an item dispensing system within the embodiment of Fig. 10.

Fig. 12 is a flow chart of an alarm manager subroutine executed by a system controller within the embodiment of Fig. 10.

Figs. 13A and 13B are a flow chart of a process executed by a host computer within the embodiment of Fig. 10.

## Detailed Description of the Invention

Referring to Fig. 1, a counter 20, for example, a point-of-sale retail checkout counter, has a customer side 22 and a retailer or clerk side 24. The counter 20 has an upper surface 26, which is normally a working surface on which items to be purchased are normally placed. In addition, point-of-sale displays and other items (not shown) are often placed on the working surface 26. A clerk standing on the retailer side 24 of the counter 20, scans or otherwise enters the items and their prices into a retailer point-of-sale terminal 33 and accepts the customer's payment for the goods by credit card or cash. In accordance with the present invention, an item dispensing system 29 is integrated into the counter 20. In the example to follow, the item dispensing system will be described as a gaming ticket dispensing system; however, as will be appreciated, the disclosed dispensing system may be used to dispense many different items that can be compactly stored in bulk, for example, other types of tickets, phone cards, stamps, cards or any other items capable of being relatively compactly inventoried and automatically dispensed.

A game display panel 30 is located on and normally removably attached to, the upper surface 26. The panel 30 has a predetermined number, for example, sixteen samples of game tickets 32, for example, instant lottery tickets displayed for view by the customer. The game ticket samples 32 are normally presented in the panel 30 in an attractive, easy to read display (such as in arrayed locations 1 through 16 shown in Fig. 1, as an example) so that the tickets catch the eye of the customer and clearly identify the game and its value.

If a customer desires to purchase game tickets, the customer pays the clerk with cash or credit card. The amount of the ticket purchase is entered by the clerk into the retailer terminal 33 and a retailer access module ("RAM") or unit 38. The retailer unit 38 is a self contained, stand-alone unit located at a first location with respect to the POS counter 20, for example, in the proximity of the retailer side 24 of the counter 20. The module 38 has an alphanumeric display 44 and an input device 41, for example, a keypad, with assorted numeric keys 40 and a selection of function keys 42 to facilitate the transaction. Upon entering the amount of the transaction in the module 38, the retailer module 38, in electrical communications with a customer access module ("CAM") or unit 48, transmits the payment value, that is, an available credit amount, to the customer module 48. The customer module 48 is a self contained, stand-alone unit located at a second location with respect to the POS counter 20 different from the first location. The customer module 48 is normally located proximate the customer side 22 of the counter 20 in a position convenient to the customer. The module 48 has an alphanumeric display 54 and an input device 49, for example, a keypad, with a number of numeric keys 50 corresponding to the number of displayed games 32 and nonnumeric function keys 52. Each of the numeric keys has an LED 53 next to the key, and illumination of the LED indicates that the game associated with that key may be played. Upon the available credit being displayed in display 54, utilizing the numeric keys 50, the customer selects the desired game tickets corresponding to the displayed game tickets 32. As each selection is made, one or more items or tickets 51 are dispensed from item or ticket dispensers 58 located at a third location with

respect to the POS counter 20. The ticket dispensers 58 are normally located below the upper surface 26 of the counter 20 and oriented so that the tickets are dispensed toward the retailer side 24 of the counter 20. Thus, the dispensers 58 are normally located at a third location with respect to the counter 20 that is different from the first and second locations. After the tickets are dispensed, the remaining customer credit, that is, the amount of the purchase less the value of the item selected, is displayed in both the display 44 of the retailer module 38 and the display 54 of the customer module 48. Therefore, the customer can easily determine how many more tickets may be selected to equal the available credit. After all the tickets have been selected, the clerk then collects the dispensed tickets 51 from the dispensers 58 and gives the tickets 51 to the customer.

Fig. 2 is a schematic block diagram of the ticket dispensing system 29 illustrated in part in Fig. 1. Power is provided to the retailer and customer modules 38, 48, respectively, and the ticket dispensers 58 by a power supply 64. The power supply is designed to be connected to an AC power outlet normally found in retail establishments. Power is transferred to, and data is transferred between, the various components of the dispensing system 29 by means of cables 66, each of the cables 66 having eight conductors. The access modules 38, 48, ticket dispensers 58 as well as other components, for example, a serial POS printer 70, have pass through ports; and therefore, the cables may interconnect the components in a daisy chain manner, thereby providing complete modularity and scalability. With such a daisy chain architecture, any number of ticket dispensers 58 from one to the design maximum number, for example, 16, may be connected to the dispensing system 29 using the cables 66.

The power supply 64 provides an output DC voltage, for example, +15 VDC, which is supplied on two conductors of the eight conductor cables 66. One of the +15 VDC conductors is combined with a ground to form a first twisted pair. One conductor provides a serial data line and is combined with a ground to form a second twisted pair. Another conductor provides a serial clock line

and is in a third twisted pair with a ground. The eighth wire is used to provide a signal from the item dispensers 58 to the retail module 38 and is in a fourth twisted pair with the other +15 VDC line. For example, the dispensers 58 may provide a signal over the eighth wire indicating that a dispenser drawer or door is opened. Data is transferred across the cables 66 using a two wire "$I^2C$-BUS" protocol from Phillips Semiconductors which is commercially available from Arrow Electronics of Centerville, Ohio. The "$I^2C$-BUS" is a widely used, highly flexible and cost effective serial protocol that is often used in consumer electronics equipment and has been used in point-of-sale terminals. Under the protocol, data is transferred in packets between the retailer module 38 and customer module 48 and the item dispensers 58. Data packet transfer occurs in response to commands and requests initiated by the retailer module 38.

Even though the retailer module 38, customer module 48 and item dispensers 58 all have self-contained microprocessors, the retailer module 38 is the master control for the ticket dispensing system 29. The retailer module 38 provides initialization to the customer module 48 upon power up and further, provides ticket prices, ticket inventory and purchase amount to the customer module 48. Further, the retailer module 38 receives information relating to which keys the customer has pushed and provides instructions to the dispensers to dispense an appropriate number or selection of tickets.

Normally, the item dispenser modules 58 include two separate storage and bursting mechanisms, that is, ticket dispensing mechanisms; and therefore, the illustrated six item dispensers 58 provide the capability of dispensing tickets for twelve games. The ticket dispensers are substantially as described in U.S. Patent No. 4,982,337 and PCT Application Serial No. PCT/US97/0576, each of which is assigned to the assignee of the present invention, and the entirety of both applications is incorporated by reference herein.

Referring to Fig. 3, the retailer access module 38 has a power/data port 72 connected to a cable 66, and RS-232 port 73 and an RS-485 port 76. The power conductors from the cable 66 are connected to a DC-DC converter

78. The DC-DC converter 78 has a first function of stepping down the +15 VDC to a lower level, for example, +5 VDC, with the appropriate regulation which is supplied to various components on power line 79. The power supply 64 of Fig. 2 provides the higher +15 VDC level across the cables 66 to reduce the current flow within the cables 66.

The retailer module 38 further includes a microprocessor 74, for example, Model No. 80C652 manufactured by Phillips Semiconductor and commercially available from Arrow Electronics of Centerville, Ohio. In addition, the module 38 includes a realtime clock 76, read-only memory ("ROM") 78, non-volatile random access memory ("NOVRAM") 80, a universal asynchronous receiver/transmitter ("UART") 82, an RS-232 transceiver 83, an RS-485 transceiver 85 and an audio indicator or speaker 84. The realtime clock 76 provides data and time information that is associated with a history of ticket sales. Thus, the ticket sales can be analyzed in reports by shift, by day, by week, etc. The retailer module 38 is electrically connected to the LCD display module 44 having two rows of 16 characters of display. An uninterruptable power supply 75 has a battery backup 77 and provides a continuous source of power on line 81 to the realtime clock 76 and the NOVRAM 80.

The retailer module 38 is also connected to the keypad 41 which includes 5 rows of keys 40 (Fig. 1) four columns wide that operate as 16 numeric keys and 4 nonnumeric function keys 42. An address decoder and glue circuit 86 receives input data on line 39 from the keypad 41 and provides output data on line 43 to the LCD display 44. The decoder and glue circuit 86 is a collection of digital and analog logic and interface circuitry that handles I/O functions to permit the microprocessor 74 to respond to and operate the display 44, keypad 41 and speaker 84. For example, the circuitry 86 decodes keystrokes from the keypad 41 into binary data that may be processed by the microcontroller 74. Further, the decoder circuit 86 receives binary data representing information to be displayed and converts that data to output signals that are appropriate for the LCD display 44. The decoder circuit 86 is also effective to provide audio output signals to the audio indicator or speaker 84, as required. The circuit 86 may be

implemented using 7400 Series logic from Philips Semiconductor, Inc. The controller 74, ROM 78, NOVRAM 80, address decoder 86 and UART 82 are interconnected by address, data and control buses 87 in a known manner. In addition, the realtime clock 76 is also connected to the data and control buses.

Referring to Fig. 4, the customer access module 48 has a pair of pass-through power/data ports 90, 92 which are connected to the cables 66. A DC-DC converter 94 functions identically to the converter 71 of Fig. 3 and steps down the +15 VDC from the power supply 64 to +5 VDC. The +5 VDC is provided to the module components on power line 95. The customer module 48 includes a microcontroller 96 identical to the microcontroller 74 of the retailer module 38, ROM 98, RAM 100 and an address decoder and glue circuit 102. The microprocessor 96, ROM 98, RAM 100 and decoder circuit 102 are interconnected by address, data and control buses 97 in a known manner. The address decoder and glue circuit 102 handles the I/O functions associated with providing outputs to and receiving inputs from the display 54, keypad 49 and speaker 104. For example, the circuit 102 receives inputs on line 99 from a keypad 49 containing a 5 row by 4 column matrix of keys that provides 16 game keys 50 and 4 function keys 52. The decoder and glue circuitry 102 further provides output signals on line 101 to drive LEDs 53 associated with the keys on the keypad 49. In addition, the decoder and glue circuitry provides data on line 103 to the LCD display module 54 which is a 2 line by 16 character display. The decoder and glue circuitry 102 further provides power on line 105 to drive the illumination for backlighting the LCD display 54 and audio signals on line 107 to the audio indicator or speaker 104.

The retailer module 38, customer module 48 and ticket dispensers 58 are distributed in three different locations with respect to the counter 20; and the retailer module 38 and customer module 48 are being operated by different persons at different times. However, it is necessary that the process of purchasing game tickets, selecting game tickets and dispensing game tickets be carried out in a coordinated manner, which means under a central control. In the ticket dispensing system 29, the retailer module 38 is the master controller

of the system. Since the retailer and customer modules 38, 48 are together performing most, if not all, of the same tasks that are currently being performed by integrated stand-alone ticket dispensers, the normal operation of the system will be described to the extent that the nature of the operations of the retailer and customer modules will be understood. It is not believed necessary to describe in detail every operation of the modules 38, 48 for one of ordinary skill to understand the present invention.

In use, the first operation is to apply power to the system. Referring to Figs. 3 and 5, when power is supplied to the ticket dispensing system 29, the retailer access module 38 at 502 performs a self-initialization as well as providing data for initializing other components. More specifically, the microcontroller 74 initializes or provides default values for all of the boards and components within the retailer module 38. Further, the microcontroller 74 establishes communications links over the cables 66 to the ticket dispensers 58 and customer module 48; and in the process, provides initialization and default values to those units. Utilizing the "$I^2C$-BUS" serial data protocol, the microprocessor 74 fabricates packets of data and transfers them to, and receives packets of data from, the customer module 38 and the ticket dispensers 58. The composition and transfer of the data packets is in accordance with the "$I^2C$-BUS" protocol. Therefore, on a regular basis, the microprocessor 74 is sending a data packet to the customer module 48 that either provides information to, or requests status information from, the customer module 48. The initialization step 502 tests other components in the system, for example, the motors within the ticket dispensers 58.

Referring to Figs. 4 and 6, upon power being applied to the customer module 48, the microcontroller 96 at 602 establishes default values and otherwise initializes serial ports 90, 92, the LCD display 54 and the LED's on the keypad 49. Then at 604, the processor 96 instructs the address decoder and glue circuitry 102 to transfer an opening display frame to the LCD display module of 54. The opening message is normally a technical identification of the module 48 and provides no game related information to the customer. The

microprocessor 96 takes no further action until it receives a command from the retailer module 38 as detected at 606. The processor 96 then proceeds to process the command at 608. The command from the retailer module 38 may be a part of an initialization sequence, a status request, or information with respect to ticket pricing and inventory, etc. After the first command is successfully received from the retailer module 38 and the communications link has been successfully established, the system is considered to be online and operational. At that point, the processor 96 commands the circuitry 102 to provide another message to the display 54, for example, "Play the Lottery". The customer module 48 then simply idles awaiting further commands from the retailer module 38.

Referring back to Fig. 5, after the initialization is complete, the process at 504 awaits a login by a user. The retailer access module 38 has three different levels of password security, and the different levels of security require particular or unique password configurations. In addition, the different levels of security provide different levels of access to the ticket dispensing system, for example, a clerk normally has the lowest level of security and would be able to use the system to login and logout, enter credit values, that is, customer purchase values, and print some reports. A manager or system supervisor normally has a higher level of security and correspondingly greater access to the system and, for example, may, in addition to the clerk's functions, be able to load and enter inventory and collect reports. The highest level of security providing the greatest access to the ticket dispensing system is normally reserved for service agents who have the requirement and ability to run test routines and perform system diagnostics.

Assume for purposes of this example, that a retail clerk has logged into the system at process step 504. The microprocessor 74 then at 506 checks whether all of the dispensers are off line. If any one ticket dispenser 58 continues to be online, then game ticket sales may continue. If no dispensers are online, then the microprocessor 74 moves to execute the out of service tasks at process step 508. All of the ticket dispensers 58 may be offline because no

tickets are loaded, the system is undergoing maintenance, a cable 66 is broken, etc. The principal out of service task of the processor 74 is to detect when the realtime clock 76 rolls over to the next day, that is, past 12:00 a.m. When a new day starts, several accounting tasks must be performed, for example, the accounting data stored in the NOVRAM 80 must be shifted back one day. For example, the reports may be selected as being related to the current date, for example, yesterday's report, last weeks report, etc. Therefore, when the realtime clock rolls over to a new date, the accounting data associated with today must be assigned to yesterday, and after Saturday midnight, this week's data is now considered to be last week's data, etc. The microprocessor 74 continues to perform the out of service tasks at 508 until at least one item dispenser 58 is brought online.

When the microprocessor 74 detects that at least one dispenser is online, the processor then checks at 510 to determine whether the current credit value is zero. In the zero credit state, the ticket dispensing system 29 is available to sell tickets, but there is no current sales activity. This state is the normal idle state for the system. If the credit is determined to be zero, the microprocessor at 512 then performs the zero credit tasks. Such tasks include checking for the entry of a password, checking for the entry of a credit and, again checking the realtime clock for a date rollover, If the processor 74 detects that a credit has been entered, the process at 514 then moves to execute the nonzero credit tasks at 516.

The major nonzero credit tasks are set forth in the flow chart of Fig. 7. As previously described, the processor at 702 detects whether another password has been entered. If so, the processor 74 then executes password tasks at 704. If not, the processor again tests at 706 whether the realtime clock has experienced a date roll over. If so, the date roll over tasks as previously described are executed at 708. If there has been no date roll over, the processor 74 determines at 710 whether there is any credit on the system, that is, whether the clerk has entered into the retailer access module 38, a credit amount equal to a payment made by a customer to purchase tickets. If a credit

value is detected, the microprocessor 74 in the retailer module 38 then posts the credit at 712. In posting the credit, the microprocessor 74 enters the credit value in the NOVRAM 80 and causes the decoder and glue circuit 86 to provide an output to the display module 44 to display the credit value to the retail clerk.

In addition, the microprocessor 74 prepares a data packet including the credit value which is transferred over the cables 66. Referring to Fig. 6, the customer module receives the data packet; and at 606, the processor 96 detects the presence of the credit value transferred by the retailer module 38. The processor 96 then instructs the circuitry 102 to provide the credit value to the display 54. Upon viewing the credit amount in the display 54 of the customer module 48, the customer then knows to begin the selection of game tickets, the total value of which is to equal the displayed credit value. The customer module 48 detects at 610 whether one of the numeric keys 50 or one of the function keys 52 on the keypad 49 is being pressed by the customer. If a key actuation is detected the processor 96 then at 612 checks whether a credit value exists. If one of the game keys 50 is pressed, but the retailer module 38 has not provided the customer module 48 with a credit amount, the keystroke cannot be accepted. In this situation, the processor 96 at 614 causes the address decoder and glue circuitry 102 to provide a signal to the audio indicator 104 which, in turn, produces an audio warning tone or beep.

If a credit value exists, the processor 96 at 616 determines whether the retailer module has transmitted an inhibit command to the customer module 48. If the retailer module 38 is processing a previous keystroke from the customer module 48; and the successful processing of the keystroke depends on the operation of another device, for example, the ticket dispenser 58, the system cannot accept any additional game selections from the customer until the previous selection has been successfully processed. Therefore, immediately upon receiving a keystroke from the customer module of 48, the retailer module 38 transmits a data packet including an inhibit command back to the customer module of 48. When the retailer module 38 receives an acknowledgment from

the ticket dispensers 58 indicating that a dispense ticket command has been received, the retailer module 38 then transmits a cancel inhibit command to the customer module 48. The retailer module 38 will subsequently check for a successful ticket dispensing operation.

Upon receipt of the cancel inhibit command, microprocessor 96 at 617 then determines whether the pressed key is one of the function keys 52. If so, the processor 96 at 618 processes the function key. In this example, the processor 96 commands the circuitry 102 to provide a message to the display instructing the customer to press a numeric game key, for example, "Select a Game". The process then loops through the process just described with respect to process steps 606-616; and if, at 617, a function key is not detected, the processor 96 at 619 processes the numeric key. That processing is basically to decode and identify the item or game associated with the numeric key. Thereafter, the processor 96 at 620 transfers a data packet including that game identification to the retailer module 38 in response to the next status request received from its microprocessor 74. The processor 96 then updates the credit value for the customer module 48. In updating the credit value, the processor 96 subtracts the value of the selected game ticket from the original purchase value; and instructs the circuit 102 to display the updated credit in the display 54 for the customer. The customer module 48 then at 622 returns to its idle mode in which it manages the display frames. With a credit present and being displayed, the module 48 will normally not change the state of the display.

Knowing that a credit exists, the retailer module 38 next expects to receive a keystroke from the customer module 48 representing the identity of a particular game selected by the customer. If at 714, the processor 74 detects the receipt of a game identification, it then proceeds at 718 to process the game selection request. Under normal circumstances the microprocessor 74 prepares and sends a data packet with a dispense command to an appropriate one of the item dispensers 58, and also send an inhibit command data packet to the customer module 48. If the ticket is available, the one of the item dispensers 58 dispenses the ticket which makes it available to the retail clerk for collection and

presentation to the customer. Any irregularity in the dispensing process, for example, a jam, is detected by the item dispenser 58 and a state signal representing that condition is transmitted over the cable 66 to the retailer module 38. In addition, upon receiving the dispense command, the item dispenser 58 sends an acknowledgment to the retailer unit 38.

In some situations, the ticket dispenser may be empty and that zero inventory condition is transmitted back to the microprocessor 74. The microprocessor 74 then prepares a data packet for the customer module 48 that includes a game offline command indicating the zero inventory condition. The game offline may also arise because the selected item dispenser 58 is down for maintenance or if there is a communication problem with the item dispenser 58. Referring to Fig. 6, the microprocessor 96 detects at 606 the receipt of the game offline command, and at 608, the command is processed. Upon receipt of the game offline command, the microprocessor 96 within the customer module 48 turns OFF the LED next to one of the keys 50 on the keypad 49 that is associated with the game that is offline. In addition, the microprocessor 96 causes the address decoder 102 to provide a message to the LCD display 54 that requests the customer to "Play Another Game". In addition, the microcontroller 96 will set a state variable within the customer access module 48 that will provide the same message to the customer for subsequent depressions of that same key. That state variable remains set until the microcontroller 96 receives a command from the retailer module 38 canceling the game offline command.

Returning to process step 718 of Fig. 7, when the retailer module 38 detects that the acknowledgment to the dispense command from the ticket dispenser 58, the processor 74 sends a release inhibit command to the customer module 48. The processor 74 then iterates through the nonzero credit tasks loop and checks for a password at 702, a date rollover at 706, and a credit on the system at 710. If the value of the game selection by the customer did not utilize all of the available credit, the processor 74 calculates the remaining credit, that is, the original credit less the value of the dispensed game ticket. At

512, the updated credit value is entered in the NOVRAM 80. The process of game ticket selection by the customer and ticket dispensing continues until the microprocessor 74 determines at 510 that the credit value is zero and then returns to the process illustrated in FIG. 4. The processor 74 then proceeds at 518 to poll the working item dispensers 58 and record any detected problems. The retailer and customer access modules 38, 48 continuously iterate through the processes illustrated in Figs. 5-7 for as long as power is applied to the system. When the customer module 48 is idling at 622 of Fig. 6, the processor 96 normally causes the address decoder and glue circuitry 102 to transmit a message to the LCD display module 54 requesting the customer to "select function or game." However, if the credit is zero, the processor 96 causes the display 54 to scroll through a number of default messages. The microprocessor 96 continuously iterates through the process steps 706-714 as long as power is applied to the customer module of 48.

The above description assumed that the customer was selecting only numeric keys, however, the customer module 48 includes several function keys 52 which may be used in combination with the number keys to select the game tickets. For example, one of the function keys may be used to select a predetermined number, for example, 5, tickets. After pressing that function key, the customer is then prompted by the display 54 to press a numeric game key. Upon a game key being selected, the processor 96 then creates five game identification data packets that are then serially transmitted to the retailer module 38. Another function key may be set up to choose different preselected number, for example, 10 tickets. The third function key may be used to play all of the selected games. A fourth function key may also be utilized to randomly select the available games until the credit amount is satisfied. With each of the other function keys, after the function key is pressed, the customer then selects a game key; and the processor 96 provides game identity data packets that correspond to the function key that was selected.

To review a normal transaction, a customer at the check out counter 20, desiring to purchase game tickets, gives the cashier an amount of

money equal to the purchase. The retail clerk then uses the keypad of 41 to enter the amount of the transaction, that is, the credit due the customer. The microcontroller 74 within the RAM 38 detects and identifies the keys pressed by the retail clerk, posts the amount of the credit in the NOVRAM 80, displays the credit value in the retailer module display 44 and transfers the credit value to the customer module of 48. The processor 96 within the customer module 48 displays the credit value.

If the microprocessor 74 of the retailer module 438 detects that any of the ticket dispensers are off-line or, that there is no inventory of tickets in some of the ticket dispensers, that information is stored in the NOVRAM 80; and in addition, a game off-line command is transmitted over the cable 66 to the customer module 48. The processor 96 detects a game off-line command and sets a state variable with respect to that game. In addition, the processor 96 commands the address decoder and glue circuitry 104 to turn OFF an LED 53 next to a key 50 in the keypad of 49 associated with the off-line game. Thus, the customer knows that the game is unavailable and that the key is inactive.

When the credit amount is displayed by the LCD display 54 to the customer, the customer knows that online games represented by the active keys may be selected. Upon pressing a key, the microcontroller 96 transmits the game identity to the retailer module 38, and the microcontroller 74 responds with an inhibit to the customer module 48. The processor 74 then proceeds to command the appropriate ticket dispenser to dispense the selected ticket; and upon receiving an acknowledgment to the dispense command, the processor 74 removes the inhibit from the customer module 48. Simultaneously, the microprocessor 74 recomputes the current credit value and posts the new credit value in the NOVRAM 80 as well as the retailer display 44. The processor 96 in the customer module 48 also computes an up-to-date credit value and displays the new credit value in the display 54. That process continues until the customer has selected a number of tickets that brings the credit value to zero. The retail clerk then collects the dispensed tickets from the dispensers 58 and provides the tickets to the customer.

The retailer access module 38 may also be used in association with the printer 70 to provide a wide variety of reports. The NOVRAM 80 within the module 38 maintains a complete history of ticket sales in terms of when they were sold, which game tickets were sold, the value of the game tickets, the clerk on duty, etc. Further, many reports of the history of sales can be provided, for example, sales by the shift by the day, or by the week, etc.

The item dispensing system 29 of the above described invention provides a distributed, modular and scalable item dispensing system that has many features making it especially suitable for point-of-sale counters. First, the present invention provides a game ticket purchase and dispensing system that is very automatic, very secure and has a high level of reporting. Thus, with the system automatically calculating the credit remaining, there should be no math mistakes. Further, the automatic dispensing should eliminate mistakes in accidentally dispensing too many tickets. With the tickets locked in their dispensers, ticket theft is minimized if not eliminated.

By making the retailer and customer modules 38, 48 and the dispensers 58 self contained, stand-alone units, the units can be located at the POS counter 20 at any convenient location. For example, the customer unit 48 may be placed on the top surface 26 of the counter 20, or the unit 48 may be placed on another support at the counter, for example, a shelf on, or next to, the counter 20. Further, the customer unit 48 may be picked up and viewed at close range as required by customers.

Similarly, the retailer module 38 may be placed on the surface 26 of the counter 20, or it may be placed on another support at the counter 20 or adjacent the POS terminal, for example, a shelf on or next to the counter 20 or cash register. In addition, the modularity of the retailer module 38 permits it to be connected directly to a retailer POS terminal 33 Fig. 2) or its functions to be integrated within the retailer POS terminal.

The stand-alone modular construction further permits a high degree of scalability. That is, a different number of dispensers can be easily added and removed from the system 29 to accommodate different numbers of

items to be sold and dispensed. The only practical limitation is the maximum number of dispensers established by the system design which is a matter of design choice. In addition, the item dispensers 58 may be readily located at any convenient location. While it is generally considered most convenient to have the item dispensers 58 at the counter 20, they do not have to be in the proximity of the counter 20. Further, each of the item dispensers 58 may be placed in different locations at the convenience of the user.

The item dispensing system 29 of the present invention has a significant advantage in that by placing the system at the POS counter, the items to be sold are exposed to substantially more potential customers than is possible with existing systems. Thus, it is expected that significantly greater sales will be made.

While the invention has been illustrated by the description of one embodiment and while the embodiment has been described in considerable detail, there is no intention to restrict nor in any way limit the scope of the appended claims to such detail. Additional advantages and modifications will readily appear to those who are skilled in the art. For example, the serial POS printer 70 is described as having pass through ports and connected to the cables 66. However, if the POS printer 70 does not have pass through ports, it may be connected to the retailer module 38 using an RS-232 serial link. In addition, the "$I^2C$-BUS" communications protocol is used to transfer data over the cables 66; however, again, other communications protocols, for example, "CANBUS", "ESCHLON" or proprietary protocols may be used.

Further, the ticket dispensing system as described above is not interconnected with the retail POS terminal, and all communications between the ticket dispensing system and the retail system, for example, the amount of the purchase, must be entered by a retail person in both the retailer module 38 and the retailer POS cash register 33. As will be appreciated, referring to Fig. 2, the retailer access module 38 may be connected by RS-232 lines 31, 32 to the retailer POS cash register or terminal 33 and a retailer modem 34. Similarly, the retailer access module 38 may be connected by an RS-485 line 35 to a retailer

multidrop network terminal 36. With the retailer module 38 in communication with the cash register 33, the amount of the purchase only has to be entered once. In addition, with that and the other communications connections mentioned above, the inventory and sales data stored in the NOVRAM 80 can be integrated into the retailer's reporting system. Further, as will be appreciated, the whole function of the retailer access module 38 may be integrated into the retailer POS terminal 33; and in that embodiment, the retail module 38 will not exist as a separate unit.

The system disclosed in Figs. 1 and 2 provide a passive display panel 30 and a separate customer unit 48 having a number of keys corresponding to the games presented in the display unit 30. As will be appreciated, the displays in the panel 30 can be individually made active, so that they respond to actions by the customer in selecting a game. In that embodiment, the display panel has the same capabilities as the numeric keys 50. In addition, and in a similar manner, the function keys 52 may also be integrated into the display panel 30. As will be appreciated, the components of the item dispensing system 29 may installed in an existing counter, or alternatively, the components may be installed in a counter module that is a complete dispensing system and installed as a complete POS counter unit. In a further embodiment, the passive display 30 need not be used, and instead, the items are displayed and selected using only the keys 50 of the customer module 48.

Even though the item dispensing system 29 has a substantial ticket inventory and sales reporting capability, if the retailer has a number of item dispensing systems, those reports must be manually collected from each of the machines which is labor intensive, time consuming and expensive. In addition, retailers are required to provide those reports to a central administrative agency, for example, a state lottery commission, which again is labor intensive, expensive and subject to error caused by misplaced or lost reports, etc. Further, each of the item dispensing systems must be serviced on an individual basis. For example, password lists which are replicated in each of the dispensers must

be properly maintained to provide for new, modified and deleted entries. Such a task, done repeatedly for each individual machine or system of item dispensers is labor intensive, tedious and expensive.

A more efficient, automatic and timely reporting capability is provided by a further embodiment of the invention as illustrated in Fig. 8. Item dispensing machines or systems 149 are often supplied by a vendor via a commercial sale or lease to a client or customer of the vendor, for example, a state authority. The client then provides the item dispensing systems 149 to different retail locations 147 that are collectively associated with that client. The vendor may have item dispensing systems for many different items that can be compactly stored in bulk, for example, lottery tickets or other types of tickets, phone cards, stamps, cards or any other items capable of being relatively compactly inventoried and automatically dispensed. Thus, for purposes of this description, a client of the vendor is any entity that uses a group of the vendor's item dispensing systems for dispensing items, and the described distribution of lottery ticket dispensers by a state authority to retailer locations within the state is only one example of a client and an item dispensing system.

In the transaction between the vendor of the item dispensing systems 149 and its client, the vendor may contract with its client, for example, the state authority, to maintain and service the item dispensing systems 149 at the various retailer locations 147. Further, such a service contract may exist with different clients, for example, different state authorities, State#1...State#n. In this embodiment, to facilitate that service obligation, the vendor establishes a wired or wireless bidirectional communications link 160 between a host computer 161 under the control of the vendor and the item dispensing systems 149, at the various retailer locations 147 associated with different clients, for example, different states, State#1...State#n. Further, in this embodiment, a bidirectional communications link 170 is also established between the vendor's host computer 161 and client computers 171, for example, computers that are used or controlled by a client such as one or more state authorities, State#1 Computer...State#n Computer. Thus, with such communications links, the host

computer 161 is able to remotely collect data and alarm conditions from the various item dispensing systems 149 as well as pass on data from various state computers 171 to appropriate ones of the of the item dispensing systems 149. Thus, the devices of Fig. 8 function collectively as an item dispensing system network or a remote data and alarm collection ("RDAC") network 144.

In the description herein, host computer 161 is described as being a computer used by a vendor of the item dispensing systems 149. Further, the state computers 171 are described as being computers used by clients of a vendor of the item dispensing systems 149; however, as will be appreciated, those commercial relationships are illustrative and are not to be considered a limitation on the scope of the invention. The host computer as recited in the claims can be any computer, for example, computer 161, that exchanges alarms and/or other data with item dispensing systems 149 regardless of the commercial relationship of the user of the host computer 161 to the vendor of the item dispensing systems 149. Further, the client computer as recited in the claims can be any computer, for example, computer 151 that exchanges alarms and/or other data relating to the item dispensing systems 149 with the host computer 161 regardless of the commercial relationship of the user of the client computer to the vendor of the item dispensing systems.

In the specific example illustrated in Fig. 8, in a first state, for example, State #1, a plurality of retail locations 147, for example, Retailer #1...Retailer #n, each have a plurality of item dispensing systems 149, for example, ID #1...ID #n. The item dispensing systems 149 may be the item dispensing systems 29 (Fig. 1) described earlier herein, a clerk facilitated item dispensing unit such as that described in U.S. Patent No. 4,982,337, a stand-alone item dispensing machine or any other item dispensing system that is known in the art, or any combination of such item dispensing systems. However, it is required that each of the item dispensing systems 149 of Fig. 8 have a system controller 145, for example, referring to Fig. 3, the microcontroller 74 and associated devices within the retailer module 38. In addition, each item dispensing system must have a communications port, for example, referring to

Fig. 2, a retailer modem 34 or a retailer multidrop network terminal 36. As an alternative to a wired communications link, the port may be implemented using an RF or other wireless communications technology. Similar groupings of item dispensing systems, ID #1...ID #n, are also located at a plurality of retailer locations, Retailer #1...Retailer #n, in one or more other states, State #n.

In the embodiment of Fig. 8, each of the retailer locations 147 have respective retailer computers 151, and each of the retailer computers 151 is connected to associated system controllers 145 within the item dispensing systems 149 at a respective retail location by a wired or wireless bidirectional communications link 150 that conforms to the communications port on each of the item dispensing systems 149. The frequency with which data is transferred between the item dispensing systems at each retailer location 147 and a respective retailer computer 151 is dependent on the computer resources and the number of item dispensing systems at each retailer location 147, the expected sales volume of the item dispensing systems 149, etc. Thus, the reporting of data from an item dispensing system to the retailer computer 151 may be on a batch basis, for example, once each shift, one or more times each day or at some other interval. Alternatively, data may be reported or transferred from an item dispensing system 149 to the retailer computer 151 in real time in response to each item dispensing system transaction.

Thus, by whatever mode of data transfer is selected, each of the retailer computers 151 is able to collect and store data associated with the operation of each of the item dispensing systems 149 and provide desired reporting for each of the item dispensing systems 149 connected thereto as well as consolidate data to provide consolidated reports for groups of item dispensing systems. Such consolidated reporting is useful in providing financial reports to a client, for example, a state authority such as a supervising lottery commission. Consolidated reports can also assist a retailer in maintaining the appropriate ticket inventory. Further, individual item dispensing systems 149 can be serviced from a retailer computer 151 connected thereto. Thus, for

example, password lists can be easily updated from a single, secure location, that is, the retailer computer 151.

The host computer 161 is normally at a location geographically remote from the retailer locations 147. As will be appreciated, the schematic showing of a host computer 161 in Fig. 8 is understood to be either a single computer or a plurality of host computers. The plurality of host computers may be a number of stand-alone computers dedicated to a particular one, or a group of, states; or the plurality of host computers may connected into a network of computers or implemented in another configuration. In some applications, a bidirectional communications link may directly connect the host computer 161 to a retailer computer 151 as shown by the communications link 160a between the host computer 161 and the retailer computer, RC #1 at Retailer #1 in State #1. With this embodiment, the retailer computer 151 may collect and store data therein or, collect data from the item dispensing systems 149 and immediately transfer that data to the host computer 161. Alternatively, a bidirectional communications link 160b may connect the host computer 161 to the system controllers 145 in each of the item dispensing systems 149 as shown by the communications links between the host computer 161 and the item dispensing systems, ID #1...ID #n at Retailer #n in State #1.

As will be appreciated, any type and combination of communications links may be established between the various retailer locations 147 and the host computer 161. The choice of a configuration of one, or a combination of, communications links will depend on many factors such as the availability of different communications resources, their respective costs, etc. Such communications links may be a commercial telephone link, an Internet link, a cable link, a satellite link, etc. The selection of a communications link configuration and the frequency of data transmissions to the host computer will also depend on previously described factors, for example, the number of item dispensing systems 149 at a location, their level of activity, the requirements of the retailer and the state authority, etc.

As previously described with respect to the retailer computer 151, the host computer 161 stores transmitted data in a remote data collection ("RDC") database and provides individual item dispensing system reports or consolidated reports relating to items dispensed, sales dollars, item inventory, etc., as desired. Most often, the client or state computers 171 are at locations geographically remote from the host computer 161 and the retailers. The choice of a communications link configuration between the host computer 161 and the state computer 171 will depend on many of the same factors previously described with respect to the communications link 160 between each of the retailer locations 147 and the host computer 161.

In use, referring to Fig. 9, the host computer 161, at 902, first receives data relative to one or more item dispensing systems 149 from one or more retailer locations 147 over respective communications links. As previously indicated, such data can be transmitted either on a transaction-by-transaction basis or on a batch basis. Further, if necessary, priorities may be assigned to the different retailers so that the host computer 161 processes the more urgent data first. At 904, the host computer 161 loads the data relating to one or more of the retailer's item dispensing systems 149 into RDC database within the host computer 161. If communicating on a batch basis, communications between any one of the retailer computers 151 and the host computer 161 is initiated by either of those computers. After the data is received from a particular retailer, if, at 905, none of the item dispensing systems is to be updated with data from the state, as will subsequently be described, the communications with that retailer are terminated. The host computer 161 operates on a continuing basis to collect data and maintain the RDC database with the most current information from all of the item dispensing systems 149. The host computer 161, at 906, detects whether a request for a report has been generated. A report request may be generated by the vendor or another entity as will be described.

A report request is serviced by the host computer 161 at 908. As part of the RDC database reporting function within the host computer 161, an electronic file of the requested report is generated. As previously described, the

host computer is controlled by the vendor of the item dispensing systems, and a report request may be generated by the vendor. Further, the vendor may request that such report be displayed, printed or transmitted to another location. If a display request is detected, at 910, the generated report is displayed at 912. Similarly, a print request detected by the host computer 161, at 914, results in the host computer causing the report to be printed at 916. As will be appreciated, the report may be printed at the location of the host computer, or the host computer can cause the report to be printed at a location remote from the host computer.

The embodiment of Fig. 8 permits data relating to the item dispensing systems 149 at the various retail locations connected to the host computer 161 to be transferred to a client computer associated with a state authority. Thus, after servicing a report request or in the absence of a report request, the host computer 161 detects, at 918, a request to transfer data to the state authority. Such a request may be generated manually by the vendor or the state or, may be created automatically in response to a calendar/clock within the host computer, a time interval since the last data transfer, the detection of some operating condition of one or more item dispensing systems 149, etc. The host computer, at 920, services that request. The particular state authority is identified, and the fields of data associated with that state authority are identified and packaged for transmission to an appropriate one of the state computers 171. The host computer 161 collects a large amount of data relating to the operation of the item dispensing systems 149, however, not all of that data is required by each of the state authorities, and some of the data collected is for the exclusive use of the vendor and not required by any of the state authorities. The host computer identifies the state authority requesting the information, retrieves the data required by that state and transfers the data to the client computer associated with that state authority. That data is then used by the state authority to create reports relating to the dispensing of items, restocking of item inventories, etc.

With this embodiment, the state authority is able to transmit data to individual item dispensing systems 149 at selected retail locations. For example, some item dispensing systems have electronic displays that provide messages associated with the dispensing of items. From time to time, the state authority may wish to modify the content of those messages; and thus, the state authority transmits new messages to the item dispensing systems via the vendor's host computer. In those applications, the host computer 161, at 922, determines whether it has received a request to accept data from a state computer 171. If so, the host computer, at 924, receives data from the state computer which includes the text of a new message and the state identification number of item dispensing systems 149 that are to display the message. The host computer then at 925 loads that data in the vending machine update ("VME") VME database within the host computer 161 and sets an "ID Update" flags for each of the different item dispensing systems identified by the data received from the state.

During a subsequent iteration through the process of Fig. 9, each time a communications link is established with a retailer, the host at 905 checks the status of the "ID Update" flags to determine whether any data is waiting to be transferred to an item dispensing system. If any of the "ID Update" flags is set, then at 907, the host computer scans the VME database to identify whether any of the set "ID Update" flags correspond to item dispensing systems 149 at the retailer with which the communications link 160 is currently established and active. If an "ID Update" flag corresponds to an item dispensing system at the retailer with which communications are active, the host computer 161 at 909 proceeds to transfer data in the VME database associated with that item dispensing system over the communications link 160 to a respective retailer computer 151. Thereafter, the host computer resets the "ID Update" flag for that item dispensing system, and at 911, checks whether that was the last item dispensing system to be updated. If not, the process again at 907 scans the VME database for other set "ID Update" flags. If none are found for the item dispensing systems 149 at the current retailer location 147 with which

communications is active. a "Last ID" flag is set. That flag is detected at 911, is reset and the process checks for a report request at 906 as previously described. The data at the retailer computer 151 may be passed immediately to the appropriate item dispensing system, or the data may be buffered in the retailer computer 151 for a later transfer to an appropriate item dispensing system 149. Thereafter, the new message is then displayed on the electronic message boards of each of the item dispensing systems 149 identified by the state. The host computer 161 then iteratively executes the process of Fig. 9 as described above. A new text message is only one example of data that may be transferred from the state to individual item dispensing systems 149 at retail locations; and as will be appreciated, any other item dispensing system data can be transferred from the state to a desired item dispensing system.

Thus, with this embodiment, the vendor's host computer 161 of Fig. 8 has all of the information necessary to fulfill most, if not all, of the reporting requirements of each of the item dispensing systems 149 at various retail locations in one or more states. As will be appreciated, the host computer can transmit the raw data collected from the item dispensing systems to the state computers 171, or the host computer 161 can perform some processing of the data and transmit that processed data to the state computers. Further, the host computer 161 can prepare state specified reports using the collected data and transmit that data to the state computers. In addition, any communications with the state computers 171 can occur either on a transaction-by-transaction basis or, on a batch reporting basis, as the parties desire.

The embodiment of Fig. 8 has several advantages over known systems. First, the vendor's service obligations with the state authority may make it feasible for the vendor to provide a host computer 161 and establish a communications link between the retail locations and the host computer. The existence of such connections gives the vendor access to all of the data required to be reported to the state authority by the retailers. Further, the vendor is connected to a large number of retailer locations 147 and an even larger number of item dispensing systems 149; and therefore, the overhead

costs of handling the data collection and reporting of the retailers can be spread thereover. Thus, the embodiment of Fig. 8 provides certain efficiencies heretofore unavailable.

Second, with the embodiment of Fig. 8, the communications between the retailer and the state authorities is, for all practical purposes, in real time and much faster than the current reporting systems in which reports are printed by the retailers and mailed or sent to the state authorities by courier. Having more current information permits the state authorities to more quickly audit the operations of the retailers and generate their own financial reports. That faster financial reporting should permit the state authorities to more quickly settle their financial accounts with the retailers. In addition, the better reporting will allow a more rapid response to low item inventories that may be detected. As in any business, more current, accurate information provides an opportunity for a more accurate analysis of current operations, more accurate predictions and a more efficient operation overall.

Another embodiment of the invention is illustrated in Fig. 10. In this embodiment, the item dispensing systems 149 are normally fully automated, stand-alone dispensing machines that are capable of dispensing items that can be compactly stored in bulk, for example, lottery tickets or other types of tickets, phone cards, stamps, cards or any other items capable of being relatively compactly inventoried and automatically dispensed. As with the embodiment of Fig. 8, each of the item dispensing systems 149 has a system controller 145 including a communications port. As an alternative to a wired communications link, the port may be implemented using an RF or other wireless communications technology. A wired or wireless bidirectional communications link 160 exists between a host computer 161 and the item dispensing systems 149 at the various locations 148. Similarly, a wired or wireless bidirectional communications link 170 exists between a host computer 161 and the state computers 171. With such communications links 160, 170, the host computer 161 is able to remotely collect data and alarms from the various item dispensing systems 149 as well as pass on data from various state computers 171 to

appropriate ones of the of the item dispensing systems 149. Thus, the devices of Fig. 10 function collectively as an item dispensing system network or a RDAC network 144.

As with the embodiment of Fig. 8, in this embodiment, a client of the dispenser vendor is normally the item vendor, that is, any entity that uses the vendor's dispensers for dispensing items. The described sale of lottery tickets by a state authority is only one example of a client or item vendor and an item dispensing system of the present invention. As will be appreciated, commercial relationships described herein are illustrative and are not to be considered a limitation on the scope of the invention. The host computer as recited in the claims can be any computer, for example, a computer 161, that collects alarms from and/or exchanges data with item dispensing systems 149 regardless of commercial relationships.

The locations 148 may be any location including a commercial retail location. The host computer 161 is normally at a location geographically remote from the locations 148. As will be appreciated, the schematic showing of a host computer 161 in Fig. 10 is understood to be either a single computer or a plurality of host computers. The plurality of host computers may be a number of stand-alone computers dedicated to a particular one, or a group of item vendors, for example, states; or the plurality of host computers may be connected into a network of computers or implemented in another configuration.

As will be appreciated, any type and combination of communications links 160, 170 may be established between system controllers 145 and a host computer 161 and the host computer 161 and a state computer 171. The choice of a configuration of one, or a combination of, communications links will depend on many factors such as the availability of different communications resources, their respective costs, etc. Such communications links may be a commercial telephone link, an Internet link, a cable link, a satellite link, etc. The selection of a communications link configuration and the frequency of data transmissions to the host computer will also depend on previously described factors, for example, the number of item dispensing

systems 149 at a location, their level of activity, the requirements of the item vendor, for example, a state authority, the requirements of an item dispensing system service provider, for example, the item dispensing system vendor, etc.

As described with respect to Fig. 8, in the embodiment of Fig. 10, vendors of the item dispensing systems 149 normally lease or sell item dispensing systems to item vendors for different periods of time. In addition, for items such as lottery tickets, the item vendors often have a maintenance contract with the item dispensing system vendor to keep the item dispensing systems operating reliably at the various locations. The obligation to maintain adequate item inventories in the item dispensing systems is normally undertaken by an entity at the site of the item dispensing system. Thus, in the present example, a maintenance and service contract often exists between the item dispensing system vendor and the item vendors, that is, the different state authorities, to maintain lottery ticket dispensing machines operating properly. In the fulfillment of maintenance and service responsibilities, some service providers hire persons to periodically visit the item dispensing systems, for example, daily, weekly, etc. While such a process may be effective in some environments, in many environments some item dispensing systems are used significantly more than other machines. Further, if a fault or a failure does occur, the item dispensing system may remain inoperative until the next periodic visit by a service person. Therefore, it is highly desirable to be able to monitor the operation of the item dispensing systems and provide service on the basis of their use as well as any faults that may occur.

The absence of a communications link between an item dispensing system and the host computer means that fault conditions within the item dispensing system may go unreported. Further, the fault may go unreported, and the item dispensing system may be out of service until the fault condition is reported and a service agent is able to respond. A better item dispensing system is one in which fault conditions are automatically monitored and reported so that service agents can be dispatched to cure the fault. While such a system is an improvement over no-fault reporting, in some situations, a fault may not

result in an item dispensing system being removed from service. Dispatching a service person to address a fault which does not remove an item dispensing system from service is a nuisance and not an efficient use of service personnel.

Therefore, a superior item dispensing system is one that monitors fault conditions in real time but selectively creates alarms, for example, in only those situations in which the item dispensing machine is out of service or about to go out of service. Therefore, the present item dispensing system has two categories of faults - fatal faults and nonfatal faults. Fatal faults are referred to herein as fault conditions that take an item dispensing system out of service or substantially impact the immediate continuing operation of the item dispensing system. Conversely, nonfatal faults are referred to herein as fault conditions that do not take the item dispensing system out of service or do not substantially impact the immediate continuing operation of the item dispensing system. For example, if a monitored fault is a fatal fault, an out of service alarm is generated. However, if a monitored fault is a nonfatal fault, an alarm may or may not be generated depending on the relationship of the nonfatal fault to the stored alarm limits.

Further, threshold values that trigger nonfatal faults are programmable, so that nonfatal faults can be provided that warn of impending fatal fault conditions. Thus, the item dispensing system can be tuned to create various warning alarms representing either the existence of, or the approach of, fatal fault conditions. The ability to adjust or filter the occurrence of faults and alarms minimizes the occurrence of nuisance alarms and permits service agents to be utilized more efficiently. With the RDAC network 144 of Fig. 10, each item dispensing system 149 automatically tracks its own operating condition in real time and only sends an alarm to the host 161 in the event that a fatal fault has taken, or one or more nonfatal faults are about to take, the item dispensing system out of service. The user of the host computer 161 then monitors the alarms being provided by the item dispensing systems 149 and is able to more quickly and cost effectively dispatch service agents to the various locations 148 to minimize any downtime of the item dispensing systems 149.

Referring to Fig. 11, the system controller 145 is in electrical communications with cash receiving and storing devices, for example, a bill acceptor 152 and coin acceptor 153. Both the bill acceptor 152 and coin acceptor 153 provide signals to the system controller 145 that are indicative of the operation of the respective devices. The system controller 145 analyzes or manages the signals being provided by the respective bill and coin acceptors 152, 153 to determine their proper operation as well as any fault conditions that may occur. The system controller 145 is thus able to determine the numbers of bills and coins accepted, the cash values of the bills and coins accepted, the total value of the cash held in the item dispensing system 149 as well as any fault condition. Those data values are stored in memory associated with the system controller 145 including the fault store 154.

The system controller 145 is also in electrical communications with item dispenser modules 58 (Fig. 2). Any particular item dispensing system 149 may have one or multiple, for example, up to 9 or more, item dispensers 58. The item dispensers 58 have various solenoids, motors, lights, etc., which are operated by command signals originating with the system controller 145. In addition, the item dispensers 58 have various proximity detectors and other devices that provide feedback signals to the system controller 145. In controlling the operation of the item dispensers 58, the system controller 145 is able, via feedback signals from the item dispensers 58, to detect various operating states as well as fatal and nonfatal fault conditions. Upon those faults being detected, the system controller 145 stores the fault conditions in the fault store 154 in association with an identity of a respective one of the item dispensers 58. Based on an analysis of other signals indicative of the operating condition of each of the item dispensers 58, the system controller may determine other fatal or nonfatal fault conditions that are also stored in the fault store 154.

The system controller 145 also provides command or data signals to, and receives feedback signals from, other miscellaneous devices that are not shown, for example, lights, motors, limit switches, solenoids, etc., within the item dispensing system 149. The system controller 145 often counts the

occurrence of operation of certain switches, for example, a switch detecting the opening and closing of an access door to the item dispensing system 149. Other fault conditions are determined by the system controller 145 from the monitoring of the operation of those devices and stored in the fault store 154. The system controller 145 is also in electrical communication with a printer 157 which is used by service persons to obtain reports with respect to the operation of the item dispensing system 149. Based on the monitoring of the operating state of the printer 157, the system controller 145 determines and stores faults associated with the printer 157. Therefore, during the operation of the item dispensing system 149, the system controller 145 continuously monitors the devices within the item dispensing system 149 and maintains a record of detected or determined fatal and nonfatal faults within the fault store 154. Further, the system controller generates and stores fault states in the fault store 154 in response to detecting or determining various fault conditions. Upon an alarm being generated, the system controller 145 transfers the alarm signal and the current status of the faults in the fault store 154 to the host computer 161 for further processing.

During the process of operating the item dispensing system 149 of Fig. 11, the system controller 145 periodically executes an alarm manager subroutine illustrated in Fig. 12. The alarm manager feature described herein is optional and may be turned on or off as desired. Assuming the alarm manager is turned on, the system controller 145 is continuously monitoring the operation of all of the devices within the item dispensing system 149. Further, a number of faults are defined and stored in the fault store 154 which relate to the operating condition or state of the various devices in the item dispensing system 149. Such faults may, for example, relate to whether the bill acceptor 152 or the cash acceptor 153 is jammed, the inventory of items in the item dispensers 58, the number of bills stored in the item dispensing system 149, etc. Further, there may be composite faults that relate to the operating conditions or states of a plurality of the devices within the item dispensing system 149. For example, if a plurality of item dispensers 58 are dispensing the same item, a

composite fault may relate to the collective inventory of items in the plurality of item dispensers 58.

In addition, fault thresholds for each of the faults are stored in the fault store 154. A fault threshold is a stored value representing a state that triggers a fault. Therefore, as the system controller 145 processes feedback signals from the devices in the item dispensing system and monitors their respective operational conditions or states, in executing the alarm manager subroutine, at 202, the system controller 145 compares the operational state of the devices in the item dispensing system with the fault thresholds stored in the fault store 154. The current state of the faults in the fault store 154 are thus determined by the system controller 145 based on whether the current operating conditions of the devices meet the stored fault thresholds. If the current operating conditions or states are equal to, or otherwise meet, certain ones of the stored fault thresholds, the current states of the faults associated with those stored fault thresholds are registered, that is, switched to a true state, in the fault store 154. The current states of the other faults in the fault store 154 remain unchanged. As indicated earlier, there may be composite faults that are defined by the states of other faults. The alarm manager, at 202, also determines the state of composite faults as a function of the current states of the faults defining the respective composite faults.

Next, at 204, the alarm manager subroutine sequentially compares or tests the current state of each of the faults with the last or immediately prior state of each of the faults that was determined and stored in the fault store 154 during a prior execution of the alarm manager subroutine. At 206, the alarm manager subroutine determines if any of the registered current faults has deteriorated. In other words, has a current fault switched from a false state to a true state during the last iteration of the alarm manager subroutine. With a composite fault, the existence or registering of one of the current faults defining the composite fault may or may not cause the composite fault to be registered or switched true, depending on the states of the other faults defining the

composite fault. Thus, the system is very flexible in being able to define faults and determine a particular deteriorated state of operation of the system.

The alarm manager subroutine, at 208, determines whether the alarm system is enabled; and if so, at 210, the alarm manager subroutine generates an alarm in response to a deterioration of a registered fault. Thereafter, at 212, the alarm manager subroutine saves the current fault states as the last fault states in the fault store 154.

In one example of the above process, the system controller 145 continuously monitors the operation of the bill acceptor 152. In that monitoring process, the system controller 145, in some applications, detects a true state of a feedback signal indicating that the bill acceptor 152 is jammed. The alarm manager subroutine, at 202, in the process of discriminating all of the fault states with respect to respective fault thresholds, compares the true state of that feedback signal to a true state of a corresponding fault threshold in the fault store 154. Detecting that the states are the same, the alarm manager registers the bill acceptor out of service fault; and therefore, that fault has a current true state in the fault store 154. Next, after comparing all of the current fault states with all of the immediately prior or last fault states, at 204, the alarm manager, at 206, determines which current fault states have deteriorated. In this example, the alarm manager determines whether the current state of the bill acceptor out of service fault has deteriorated from the last iteration of the alarm manager subroutine. Assuming that the alarm manager is enabled, if the current state of the bill acceptor out of service fault has not changed, that is, its last state was true and its current state is true, no alarm is generated. If the last state of the fault was true, an alarm was previously generated; and therefore, the check for fault deterioration prevents the generation of redundant alarms. However, if the bill acceptor out of service fault has deteriorated, an alarm is generated at 210. Then, at 212, the current states of all of the faults are stored as the last states of the faults; and in this example, the current true state of the bill acceptor out of service fault is stored as its last state in the fault store 154. The system

controller 145 also immediately transfers the alarm and the current status of the faults in the fault store to the host computer 161.

Under some circumstances, a fault condition, for example, a fatal fault, immediately produces an alarm that is immediately reported to the host computer, for example, a bill acceptor out of service fault. However, as indicated earlier, some fault conditions are nonfatal faults and do not take the item dispensing system out of service or do not substantially impact the immediate continuing operation of the item dispensing system. The present invention permits fault thresholds for nonfatal faults to be varied, so that alarms are generated in a manner that promotes a continuous, uninterrupted operation of the item dispensing system. Assume, for example, that the system controller 145 controls the operation of a plurality of item dispensers 58 dispensing different items. The system controller 145 is able to maintain an internal record of the number of items dispensed by each of the item dispensers 58. Further, the system controller 145 can be programmed with the maximum number of items provided in each of the item dispensers 58. Thus, the system controller 145 is able to maintain, for each of the item dispensers 58, a running inventory of the undispensed items.

With the present invention, a low dispenser inventory threshold for the item dispensers 58 is stored in the fault store 154 and can be any number less than the maximum number of items dispensable, including zero. Normally, the low dispenser inventory fault threshold is set to the same number for all item dispensers 58 in the item dispensing system 149. The low dispenser inventory threshold value can be a percentage of the maximum number of items or a number based on other factors such as average usage of the item dispensing system 149, the expected time required to provide service personnel to the machine, etc. Hence, when the system controller 145, at 202, determines that an item dispenser 58 has an undispensed number of items equal to a corresponding low dispenser inventory threshold value in the fault store 154, a low dispenser inventory fault for that item dispenser is registered or switched to a true state. The alarm manager subroutine compares the current state of that

fault to its last state, at 204 and, at 206, determines whether the state of the low dispenser inventory fault for that item dispenser has deteriorated. Since it has, an alarm is generated and subsequently transferred to the host computer 161. The operator of the host computer can then advise someone at the site of the item dispensers to check the item inventory prior to the inventory being depleted.

In some installations having a plurality of item dispensers, it may not be desirable to generate and alarm every time a low dispenser inventory fault is registered. For example, if the item dispensing system 149 contains a plurality of item dispensers 58 (Fig. 2), the fact that a single item dispenser has a low inventory of items may not warrant that the item dispensing system 149 be serviced. Therefore, the system controller 145 may permit a low dispenser inventory fault to be registered for two or more of the item dispensers within the item dispensing system 149 before generating an alarm. In this embodiment, a multiple dispenser low inventory ("MDLI") composite fault is created that monitors the registration of low dispenser inventory faults of all of the item dispensers 58 within the item dispensing system 149. A determination is made by the user as to how many item dispensers 58 will be allowed to reach their low dispenser inventory threshold before an alarm is sent to the host computer 161. For example, if the item dispensing system has eight item dispensers and it is determined that four low dispenser inventory faults will be allowed before an alarm is sent to the host computer 161, the MDLI composite fault threshold is set to four. In the execution of the alarm manager subroutine, the MDLI composite fault remains false as long as only three of the eight item dispensers register a low dispenser inventory fault. However, as soon as any four of the eight item dispensers register a low dispenser inventory fault, the MDLI composite fault threshold is met, and the MDLI composite fault is registered or set to a true state in the fault store 154. An alarm is generated in response to detecting a deterioration of the MDLI composite fault, and the alarm and the current states of the faults in the fault store 154 are immediately transferred to the host computer 161. Such a system continuously tracks the current, real-time status

of an item dispensing system and thus, makes more cost effective and efficient use of service agents. For example, it is possible that after two item dispensers registered a low dispenser inventory fault, the item dispensing system is serviced for some other reason; and additional inventory is added to one of the item dispensers registering a low dispenser inventory fault. When the item dispensing system is placed back in service, the low dispenser inventory fault for that item dispenser is switched back to a false state.

With the capability of adjusting alarm limit threshold values, numerous item dispensing system operating states that would normally result in an out of service condition can be anticipated; and thus, an alarm can be created representing an approaching out of service condition. For example, without the ability to adjust alarm thresholds, a bill capacity fault and alarm is created when the item dispensing system reaches its maximum bill storage capacity and is out of service. In this situation, the bill acceptor 152 is out of service until a service agent can be dispatched to the item dispensing system 149 to service the bill acceptor 152. Alternatively, with the present invention, a bill capacity fault threshold value is stored in the fault store 154 that is less than the maximum bill capacity. The bill capacity fault threshold value can be chosen arbitrarily, for example, 85% or 90% of maximum capacity. The bill capacity fault threshold may also be influenced by a historical knowledge of the traffic or level of activity of the bill acceptor 152, the time required to dispatch a service person to the item dispensing system 149, etc.

The system controller 145, based on input signals from the bill acceptor 152, maintains a running count of the bills being accepted and stored by the item dispensing system 149. The alarm manager subroutine of Fig. 12 provides a bill capacity fault when the number of bills stored in the item dispensing system equals or exceeds the number of bills represented by the stored bill capacity fault threshold value. The bill capacity fault indicates that the bill acceptor 152 is approaching its maximum capacity and therefore, will soon be out of service. The bill capacity fault is determined by the alarm manager subroutine of Fig. 12 as previously described; and in response to a deterioration

of the bill capacity fault, an alarm is generated, stored and transferred to the host computer 161. Thus, the item dispensing system can be serviced prior to it going out of service because the bill acceptor is full. It should be noted that different bill capacity fault thresholds may be stored for the different denominations of bills accepted by the bill acceptor 152.

By using the fault store 154 in a similar manner, a coin acceptor capacity fault threshold value can be stored in the fault store 154 which is a number less than the maximum coin capacity. When the system controller 145 detects a number of coins accepted by the coin acceptor 153 equal to the coin acceptor capacity fault threshold, a current coin acceptor fault is registered or switched true. Upon detecting the deteriorated state of the coin acceptor capacity fault, a coin acceptor alarm is created and transmitted to the host computer 161. Therefore, the coin acceptor 153 can be serviced prior to it going out of service because it has reached its maximum capacity. Again, a different fault threshold value can be established and monitored for each different denomination of coin accepted by the coin acceptor 153.

The system controller 145 also continuously tracks the amount of cash which has accumulated within the item dispensing system 149 represented by the monetary value of all of the bills and coins accepted and stored. Normally, the item dispensing system 149 is serviced to remove all of its stored cash at periodic intervals. The ability of the present invention to store fault threshold values provides a more efficient and superior system. A cash overlimit threshold value is stored in the fault store 154, and the system controller 145 produces a cash overlimit fault when the monetary value of the cash accepted and stored in the item dispensing system 149 equals the cash overlimit threshold value. Thus, as cash accumulates in the item dispensing system 149, the system controller 145 enables a cash overlimit fault upon the stored cash having a value that is less than the user determined cash limit value. Upon detecting a deterioration of a current cash overlimit fault, an alarm is transferred to the host computer 161. The user of the host computer 161 knows that the cash overlimit alarm is a warning that the cash value accumulated in the item

dispenser has met or exceeded the user determined cash over limit threshold value. Service agents can then be dispatched in a rational manner, depending on the existence of other alarm conditions, the need to service other item dispensing systems in the locale, the number of service agents available and their schedules, etc.

Upon an alarm being created by the alarm manager subroutine of Fig. 12. the system controller 145 immediately attempts dial-up or otherwise opens a communication channel or link with the host computer 161. Should the system controller 145 fail in its initial attempt to transmit the alarm and the associated faut table to the host computer 161, it will continue in a series of further attempts until the alarm and associated fault states are successfully communicated to the host computer 161. Referring to Figs. 13A and 13B, upon data being transferred to the host computer 161 within the RDAC network 144 of Fig. 10, the host computer 161 first, at 950, determines an identity of the item dispensing system 149 from which the data is being transferred. As indicated earlier, there may be hundreds of item dispensing systems 149 connected to the host computer 161, and the operating condition of each of those item dispensing systems must be stored in the host computer 161. The host computer 161 then, at 952, determines whether the data transferred contains an alarm; and if so, at 954, the alarm is received and stored in a remote alarm collection ("RAC") database 162 within the host computer 161. If the data from the item dispensing system 149 is not an alarm but other data, for example, data relating to items dispensed, sales dollars, item inventory, etc., the host computer 161, at 956, receives and stores that data in the RDC database 163 within the host computer 161.

The host computer 161, at 958, determines whether an item dispensing system update is pending; and if so, at 960, executes an item dispensing system update. At 962, the host computer 161 determines whether the remote alarm collection feature is active or inactive. The remote alarm collection feature can be turned on or off by the user of the host computer 161. If the collection of remote alarms is enabled, the host computer 161, at 964,

proceeds to scan the RAC database 162 and display the incoming alarms from the various item dispensing systems 149. The host computer 161 then, at 966, tracks whether the incoming alarms have been viewed by a user. If not, the alarm maintains its incoming alarm status. Once the user views an incoming alarm, the host computer 161 then, at 968, automatically changes the status of the incoming alarm to that of an unresolved alarm for display and storage purposes.

The states of all the faults in the fault store 154 associated with a particular item dispensing system 149 for which an alarm was generated were transferred to the host computer 161 with the alarm. Therefore, In the process of resolving an alarm, by observing the states of the faults, the user can then make decisions as to the cause of the alarm. The user is able to determine whether the item dispensing machine has experienced a fatal fault and is out of service or, whether a nonfatal fault has occurred and service will probably be required in the near future. Thus, the user is able to determine how the alarm should be resolved. The host computer 161, at 970 (Fig. 13B), tracks whether the user has attempted a resolution of the alarm. By definition, within the host computer 161, a resolution of the alarm means that the user has entered information relating to how the alarm is being resolved. As part of that resolution process, the user, at 972, selects for display an alarm resolution template; and using that template, the user has the options of identifying the person servicing the alarm, a summary of the alarm and other comments relating to the resolution of the alarm and how it should be resolved. Upon the host computer 161 detecting, at 974, that a resolution of the alarm has been entered, the host computer 161 then, at 976, changes the status of the alarm to that of a resolved alarm for subsequent display and storage.

As part of the process of processing data from an item dispensing system, the host computer 161, at 978, determines whether a report has been requested by a client. If so, at 980, the host computer 161 services that report request. The host computer 161, at 982, determines whether a client update is pending; and if so, at 984, data is transferred from a client, for example, a state

computer 171, and stored in the vending machine update database 164 of the host computer 161. It should be noted that the flowchart of Figs. 13A and 13B is directed to the processing of alarms and is an expansion of the flowchart of Fig. 9. The processing of data by the host computer 161 for reporting, and the processing of data from a client, is discussed in more detail in the description with reference to Fig. 9.

The selectable or programmable fault thresholds of the present invention provide almost unlimited flexibility in being able to monitor the operating states of individual devices within each of the item dispensing systems 149 within the RDAC network 144. First, the present invention has the ability to segregate fatal faults from nonfatal faults. Thus, alarms can be immediately transferred to the host computer 161 upon the occurrence of a fatal fault, that is, a fault indicating the item dispensing system is out of service. However the automatic creation of alarms based on nonfatal faults is avoided, thereby minimizing the occurrence of nuisance alarms and the dispatching of service agents to item dispensing systems that are not out of service. Second, the present invention has the capability of being able to independently adjust the fault thresholds for each of the individual devices within each of the item dispensing systems. Therefore, fault and alarm sensitivity can be adjusted to meet the unique requirements of each item dispensing system 149.

This capability allows nonfatal faults and alarms to be tuned so that operating states of devices within the item dispensing system, which would normally lead to an out of service condition, can be tracked. Thus, a potential out of service condition can be anticipated, and the item dispensing system can be serviced before its occurrence. The present invention provides a significant advantage in being able to tailor and prioritize the generation and transmission of alarms to the host computer 161. This operation of the system controller 145 limits the number of alarms presented to the host computer 161 and substantially reduces the load of the host computer 161 when it is connected to a large number of item dispensing systems. By performing that function automatically, the user of the host computer 161, who is often responsible for

the maintenance of hundreds of item dispensing systems, is presented with a burden that is significantly reduced. With the above capability, the allocation of service agent assets can be made more rational, efficient and cost effective to the benefit of everyone.

While the present invention has been illustrated by a description of various preferred embodiments and while these embodiments have been described in considerable detail in order to describe the best mode of practicing the invention, it is not the intention of Applicant to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications within the spirit and scope of the invention will readily appear to those skilled in the art. For example, in the described embodiment, the generation of faults and alarms is performed by the system controller 145. While that embodiment is perceived to be more efficient and less costly, as will be appreciated, those tasks may alternatively be performed within the host computer 161 or some other computer either local with, or remote from, the system controller 145.

Further, as will be appreciated, other system configurations can benefit from a distributive processing system that utilizes fault thresholds and faults as described herein. Such configurations include, but are not limited to, configurations in which a retailer collects the cash and thus, does not have bill or coin acceptors. Further, while several specific examples of fault thresholds and faults are described herein, the claimed invention can be used to detect other operating conditions of item dispensers.

In the described embodiment, a determination is made, at 206 of Fig. 12, whether a current state of a fault represents a deterioration of the fault; and an alarm is only provided in the event that a deterioration of the fault is detected. As will be appreciated, the test for a fault deterioration is provided so that faults registered during a current iteration of the alarm manager subroutine can be distinguished from faults registered during prior iterations of the alarm manager subroutine. Faults registered during prior iterations of the alarm manager subroutine have already precipitated the transfer of an alarm to the

host computer 161. A retransmission of an alarm for a continuing fault as detected during a current iteration of the alarm manager subroutine is an inefficient user of valuable communications assets. Therefore, the alarm manager subroutine only generates alarms associated with deteriorated faults. As will be appreciated, although less efficient, the test for a deterioration of a fault may be omitted; and an alarm is generated for each current fault that is registered. Redundant alarms may or may not be subsequently identified and eliminated, if desired, either before or after their transmission to the host computer 161.

Therefore, the invention in its broadest aspects is not limited to the specific detail shown and described. Consequently, departures may be made from the details described herein without departing from the spirit and scope of the claims which follow.

What is claimed is:

1. An item dispensing system comprising:

an item dispenser,

a controller in electrical communications with the item dispenser; and

a fault store for storing fault thresholds and faults.

2. The item dispensing system of claim 1 further comprising:

a fault threshold in the fault store representing a stored number smaller than a number of items dispensable by the item dispenser;

a true state of a fault in the fault store in response to the item dispenser dispensing a number of items at least equal to the stored number; and

an alarm generated by the controller in response to the true state of the fault.

3. The item dispensing system of claim 1 further comprising:

a plurality of item dispensers;

first and second fault thresholds in the fault store representing respective first and second numbers smaller than a number of items dispensable by first and second item dispensers, respectively;

true states of first and second faults in the fault store in response to the respective first and second item dispensers dispensing a number of items at least equal to the first and second numbers, respectively; and

an alarm generated by the controller in response to the true state of only both of the first and second faults.

4. The item dispensing system of claim 3 further comprising:

a true state of a composite fault in the fault store in response to the true state of only both of the first and second faults; and

an alarm generated by the controller in response to the true state of the composite fault.

5. The item dispensing system of claim 1 further comprising:

a fault threshold in the fault store representing a stored number smaller than a number of bills storable in the item dispensing system;

a bill acceptor adapted to accept the bills;

a true state of the fault in the fault store in response to the item dispensing system storing a number of bills at least equal to the stored number; and

an alarm generated by the controller in response to the true state of the fault.

6. The item dispensing system of claim 1 further comprising:

a fault threshold in the fault store representing a stored number smaller than a number of coins storable in the item dispensing system;

a coin acceptor adapted to accept the coins;

a true state of a fault in the fault store in response to the item dispensing system storing a number of coins at least equal to the stored number; and

an alarm generated by the controller in response to the true state of the fault.

7. The item dispensing system of claim 1 further comprising:

a fault threshold in the fault store representing a stored number smaller than a desired total cash value being stored in the item dispensing system;

a cash acceptor;

a true state of a fault in the fault store in response to the item dispenser storing a total cash value at least equal to the stored number; and

an alarm generated by the controller in response to the true state of the fault.

8. An item dispensing system network comprising:

a computer;

a communications link connected to the computer, and

a plurality of item dispensing systems connected to the communications link, one of the item dispensing systems having

an item dispenser,

a controller in electrical communications with the communications link and the item dispenser, and

a fault store for storing fault thresholds and related faults.

9. The item dispensing system network of claim 8 further comprising:

a fault threshold in the fault store representing an operating state of one of the item dispensing systems;

a true state of a fault in the fault store in response to a current state of the one of the item dispensing systems being equal to the fault threshold; and

an alarm generated by the controller in response to the true state of the fault.

10. The item dispensing system network of claim 5 wherein the item dispensing systems have a location geographically remote from the computer.

11. A method of dispensing items comprising:

providing an item dispensing system;

determining a deterioration of a fault associated with the item dispensing system; and

generating an alarm in response to determining the deterioration of the fault.

12. A method of dispensing items comprising:

providing an item dispensing system;

storing a fault threshold;

registering a fault in response to an operating state of the item dispensing system being equal to the fault threshold; and

generating an alarm in response to the registering of the fault.

13. The method of dispensing items of claim 12 further comprising transferring the alarm to a computer in electrical communications with the item dispensing system.

14. The method of dispensing items of claim 13 further comprising transferring the fault to the computer.

15. The method of dispensing items of claim 12 further comprising:

comparing current states of the faults to prior states of the faults;

detecting deteriorated current states of the faults; and

generating an alarm in response to detecting deteriorated states of the faults.

16. The method of dispensing items of claim 12 further comprising:

storing a fault threshold of a fatal fault, that is, a fault taking the item dispensing system out of service or a fault that substantially impacts immediate continuing operation of the item dispensing system;

registering the fatal fault in response to an operating state of the item dispensing system being equal to the fault threshold of the fatal fault; and

generating an alarm in response to registering the fatal fault.

17. The method of dispensing items of claim 12 further comprising:

storing first and second fault thresholds of respective first and second nonfatal faults, that is, faults not taking the item dispensing system out of service or faults that do not substantially impact immediate continuing operation of the item dispensing system;

registering the first and second nonfatal faults in response to an operating state of the item dispensing system being equal to the first and second fault thresholds; and

generating an alarm in response to registering the first and second fatal faults.

18. A method of dispensing items comprising:

providing an item dispensing system for dispensing items;

receiving and storing cash with the item dispensing system;

dispensing an item from the item dispensing system in response to receiving the cash;

determining a fault representing an operating state preceding a state underwhich the item dispensing system is prevented from dispensing the item; and

generating an alarm in response to determining the fault, thereby facilitating a servicing of the item dispensing system prior to the item dispensing system reaching the state underwhich the item dispensing system is prevented from dispensing the item.

19. The method of dispensing items of claim 18 further comprising:

determining a number of bills being stored by the item dispensing system;

storing a bill capacity fault threshold representing a number less than a maximum number of bills storable by the item dispensing system;

comparing the number of bills stored by the item dispensing system to the bill capacity fault threshold;

registering a bill capacity fault in response to the number of bills being stored being equal to the bill capacity fault threshold; and

generating an alarm in response to the registering of the bill capacity fault, thereby facilitating servicing the item dispensing system prior to the number of bills being stored by the system exceeding the maximum number of bills storable.

20. The method of dispensing items of claim 18 further comprising:

determining a number of coins being stored by the item dispensing system;

storing a coin capacity fault threshold representing a number less than the maximum capacity of coins storable by the item dispensing system;

comparing the number of coins stored by the item dispensing system to the coin capacity fault threshold;

registering a coin capacity fault in response to the number of coins being stored being equal to the coin capacity fault threshold; and

generating an alarm in response to the registering of the coin capacity fault, thereby facilitating servicing the item dispensing system prior to the number of coins being stored by the system exceeding the maximum number of coins storable.

21. The method of dispensing items of claim 18 further comprising:

determining a number of items dispensed by the item dispensing system;

storing a low dispenser inventory fault threshold representing a number less than the maximum number of items dispensable by the item dispensing system;

comparing the number of items dispensed by the item dispensing system to the low dispenser inventory fault threshold;

registering a low dispenser inventory fault in response to the number of items dispensed being equal to the low dispenser inventory fault threshold; and

generating an alarm in response to the registering of the low dispenser inventory fault, thereby facilitating servicing the item dispensing system prior to the number of items dispensed by the system exceeding the maximum number of items dispensable.

22. The method of dispensing items of claim 18 further comprising:

determining a number of items dispensed by a plurality of item dispensers within the item dispensing system;

storing first and second low dispenser inventory fault thresholds representing a number less than the maximum number of items dispensable by the respective first and second item dispensers;

comparing the number of items dispensed by each of the first and second item dispensers to the respective first and second low dispenser inventory fault thresholds;

registering a first low dispenser inventory fault in response to the number of items dispensed by the first item dispenser being equal to the first low dispenser inventory fault threshold;

registering a second low dispenser inventory fault in response to the number of items dispensed by the second item dispenser being equal to the second low dispenser inventory fault threshold; and

generating an alarm in response to the registering of only both the first and the second low dispenser inventory faults, thereby facilitating servicing the item dispensers prior to the number of items dispensed by the system exceeding the maximum number of items dispensable.

23. The method of dispensing items of claim 22 further comprising:

registering a low dispenser inventory composite fault in response to the registering of only both the first and the second low dispenser inventory faults; and

generating an alarm in response to the registering of the low dispenser inventory composite fault.

24. A method of dispensing items comprising:

providing an item dispensing system;

receiving and storing cash with the item dispensing system;

dispensing items from the item dispensing system in response to receiving the cash;

storing fault thresholds with respect to operating states of the item dispensing system;

registering faults in response to operating states of the item dispensing system being equal to corresponding fault thresholds;

generating an alarm in response to the registering of the faults; and

transferring the alarm to a computer in electrical communications with the item dispensing system.

25. The method of dispensing items of claim 24 further comprising transferring the faults to the computer.

26. The method of dispensing items of claim 24 further comprising transferring the alarm and the faults to the computer.

27. The method of dispensing items of claim 24 further comprising transferring the alarm and the faults to a computer in electrical communications with the item dispensing system and geographically remote from the item dispensing systems.

28. A method of dispensing items comprising:

providing a plurality of item dispensing systems;

receiving and storing cash with each of the item dispensing systems;

dispensing items from the item dispensing systems in response to receiving the cash;

storing fault thresholds in fault stores associated with each of the item dispensing systems, each of the fault thresholds representing an operating state of a respective item dispensing system;

registering faults in the fault stores associated with each of the item dispensing systems in response to operating states of each the item dispensing systems being equal to corresponding fault thresholds;

generating alarms in response to the registering of the faults associated with respective item dispensing systems; and

transferring the alarms to a computer in electrical communications with the plurality of item dispensing systems.

29. The method of dispensing items of claim 28 further comprising transferring the faults in the fault stores associated with each of the item dispensing faults to the computer.

30. The method of dispensing items of claim 28 further comprising transferring the alarms and the faults in the fault stores associated with each of the item dispensing systems to the computer.

31. The method of dispensing items of claim 28 further comprising transferring the alarms and the faults in the fault stores associated with each of the item dispensing systems to a computer in electrical communications with, and geographically remote from, the plurality of item dispensing systems.

# ITEM DISPENSING SYSTEM NETWORK AND METHOD

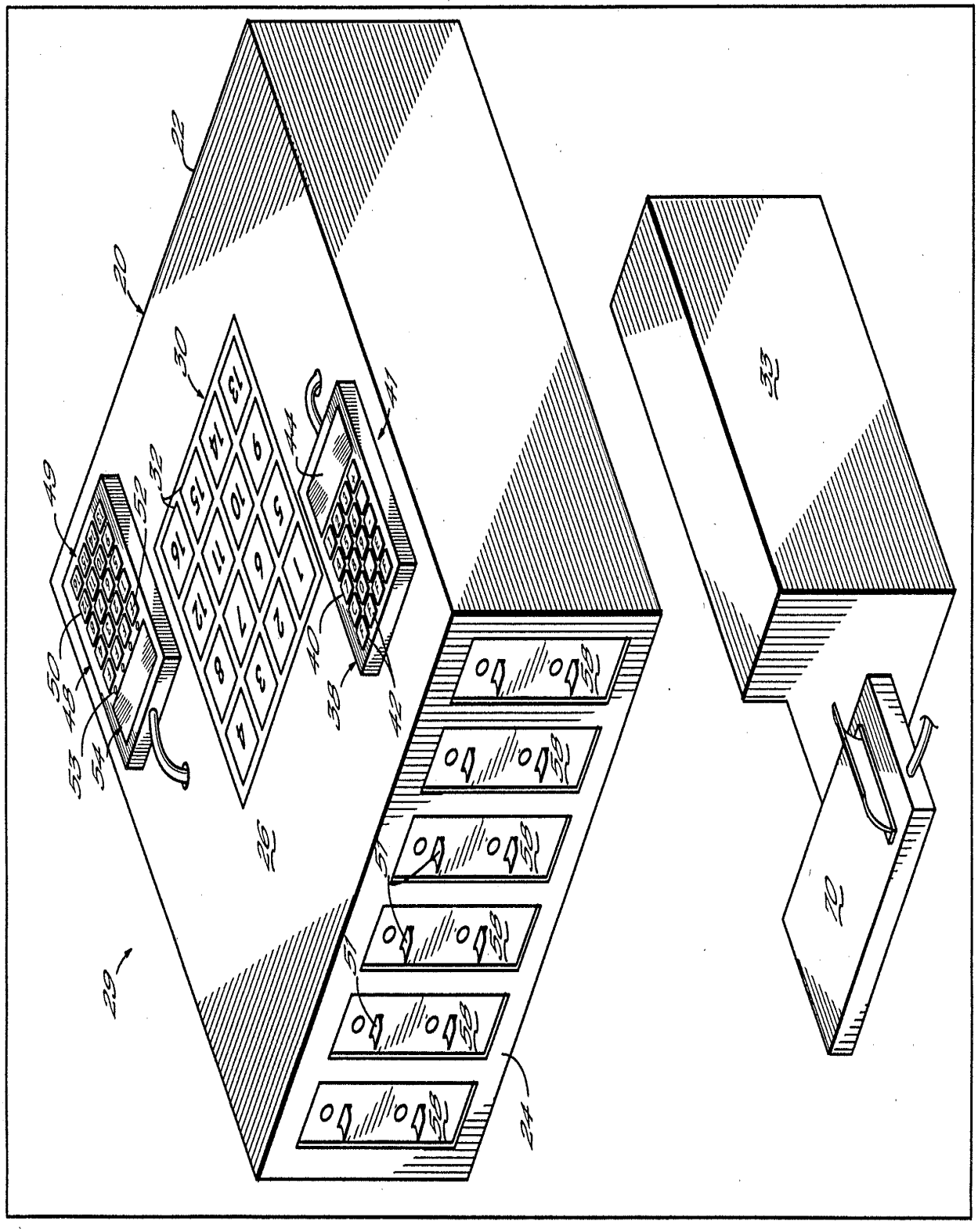
## ABSTRACT OF THE DISCLOSURE

An item dispensing system having an item dispenser, a controller and a fault store for storing fault thresholds and faults. A true state of a fault is stored in the fault store in response to an operating state of the item dispensing system being equal to the fault threshold, and an alarm is generated in response to the true state of the fault. The fault thresholds can represent operating states that normally lead to the item dispensing system going out of service, for example, a low dispenser inventory. The item dispensing system is connected to a communications link and a computer and the alarm is provided to the computer to facilitate a servicing of the item dispensing system. A method or operating such an item dispensing system and associated network is also provided.

# specification and claims as finally amended --

History:

| | |
|---|---|
| WHE Amend. on 7-27-01 | _____ on _____ |
| Ex's Amend. on 9-11-01 | _____ on _____ |
| NOA (32-47) on 9-11-01 | _____ on _____ |
| _____ on _____ | _____ on _____ |
| _____ on _____ | _____ on _____ |
| _____ on _____ | _____ on _____ |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15
16

FIG. 1

EXPRESS MAIL NO. EL699956626US
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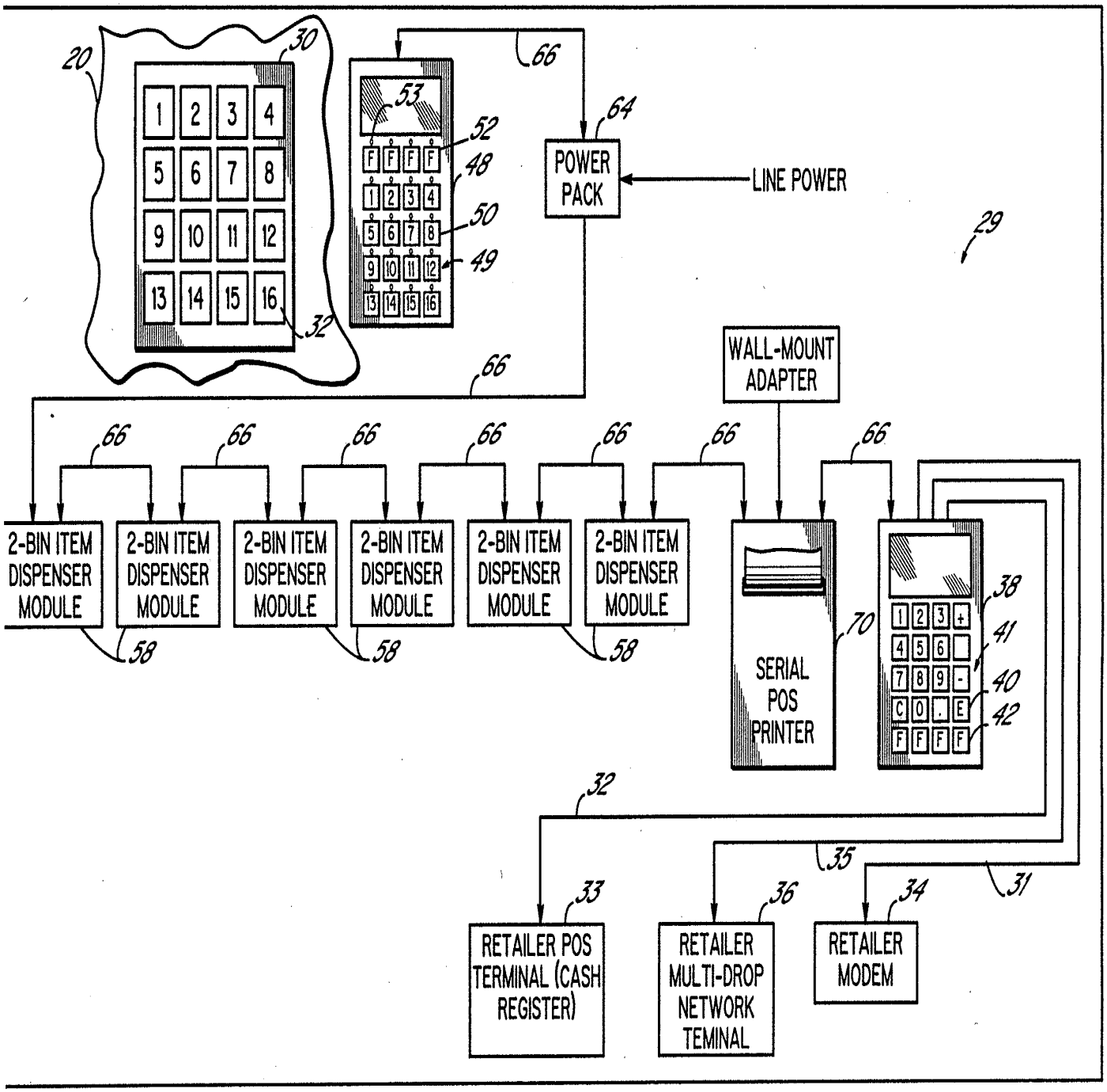
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5
6
7
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9
10
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14
15
16
32
53
52
48
50
49
66
64
POWER PACK
LINE POWER
29
WALL-MOUNT ADAPTER
2-BIN ITEM DISPENSER MODULE
58
SERIAL POS PRINTER
70
38
41
40
42
35
31
33
RETAILER POS TERMINAL (CASH REGISTER)
36
RETAILER MULTI-DROP NETWORK TEMINAL
34
RETAILER MODEM

FIG. 2

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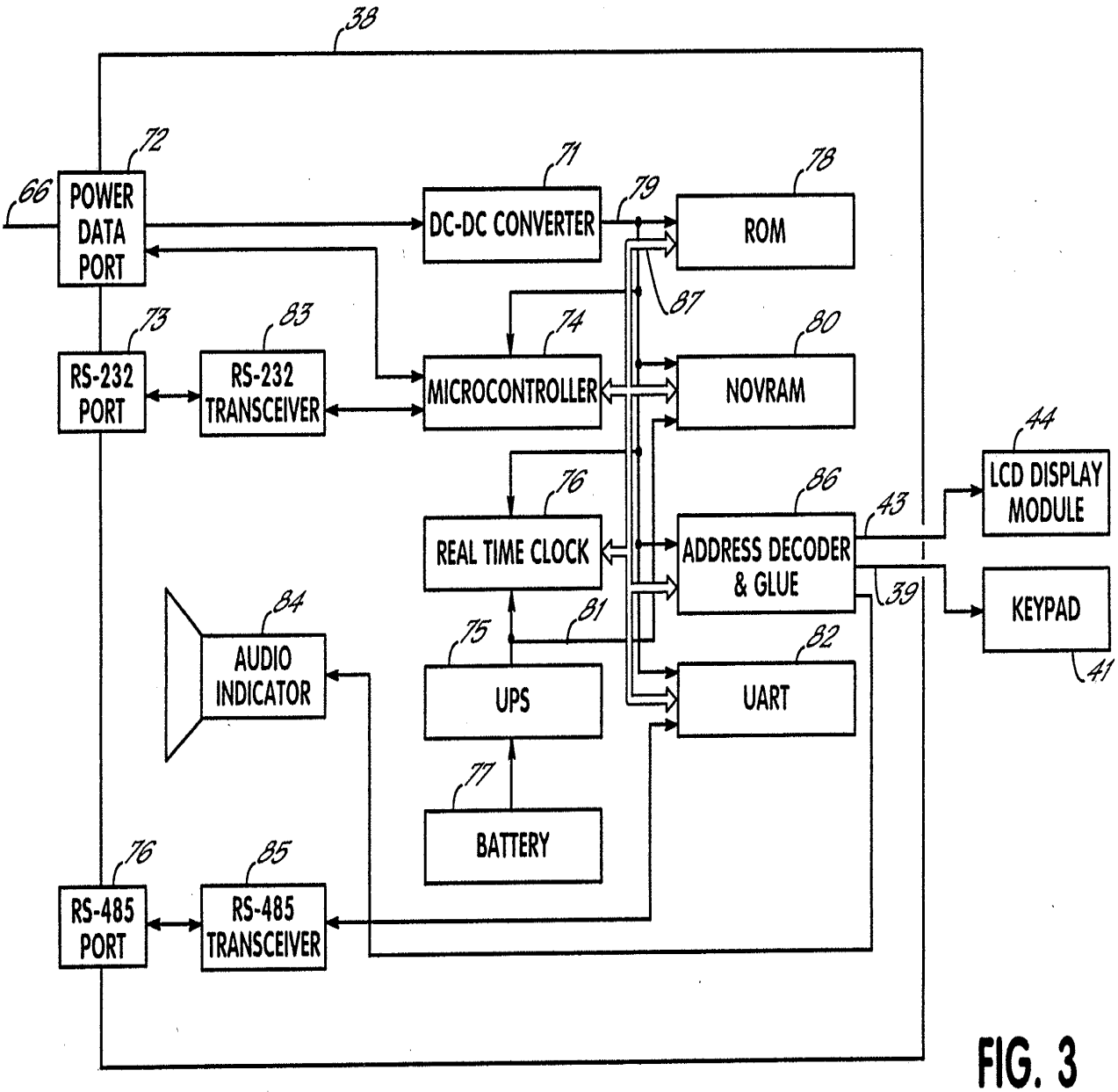
38
72
66
POWER DATA PORT
71
DC-DC CONVERTER
79
78
ROM
87
73
RS-232 PORT
83
RS-232 TRANSCEIVER
74
MICROCONTROLLER
80
NOVRAM
44
LCD DISPLAY MODULE
76
REAL TIME CLOCK
86
ADDRESS DECODER & GLUE
43
39
KEYPAD
41
84
AUDIO INDICATOR
75
81
UPS
82
UART
77
BATTERY
76
RS-485 PORT
85
RS-485 TRANSCEIVER

FIG. 3

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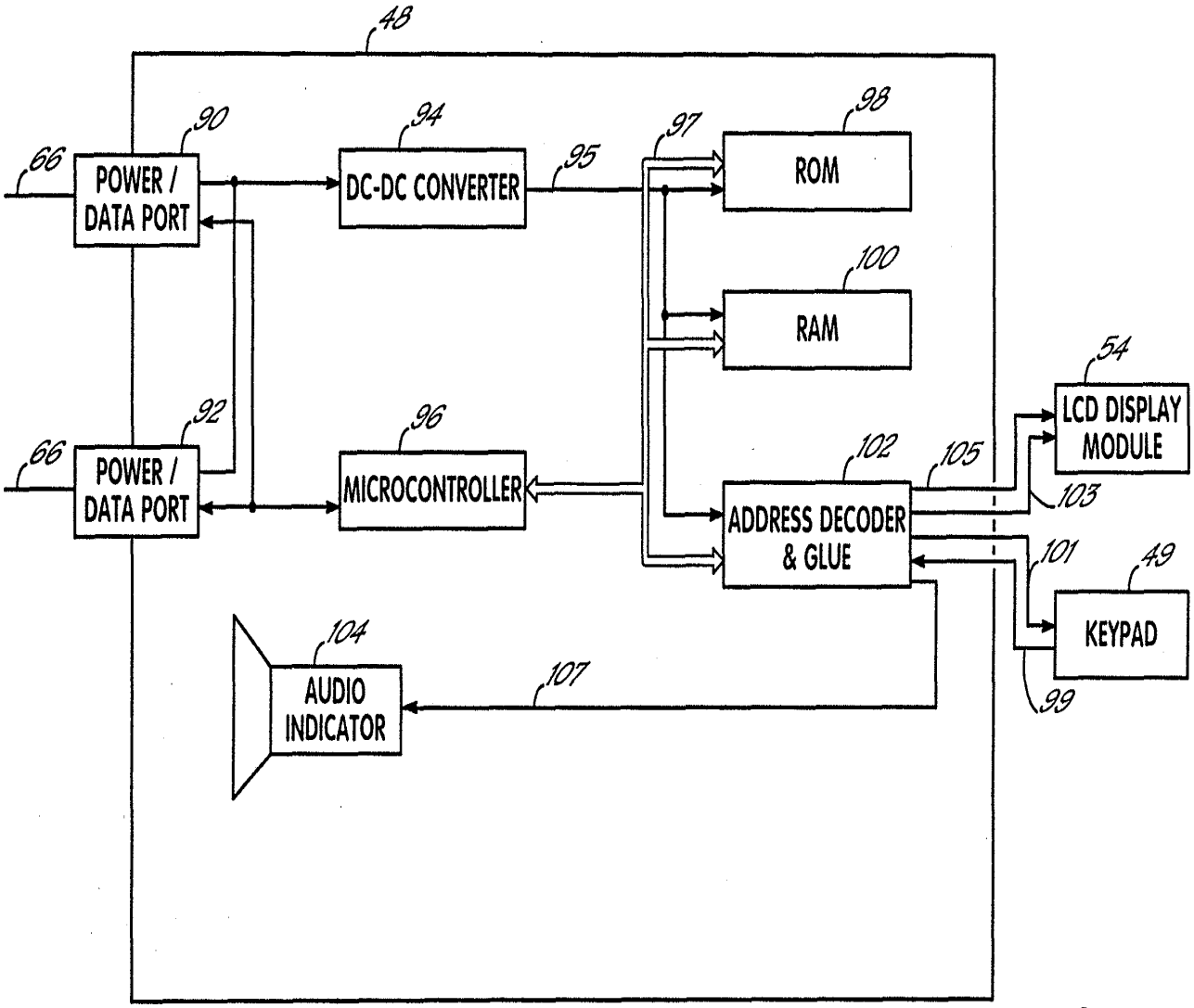
48
66
90
POWER / DATA PORT
94
DC-DC CONVERTER
95
97
98
ROM
100
RAM
66
92
POWER / DATA PORT
96
MICROCONTROLLER
102
105
ADDRESS DECODER & GLUE
54
LCD DISPLAY MODULE
103
101
49
KEYPAD
99
104
AUDIO INDICATOR
107

FIG. 4

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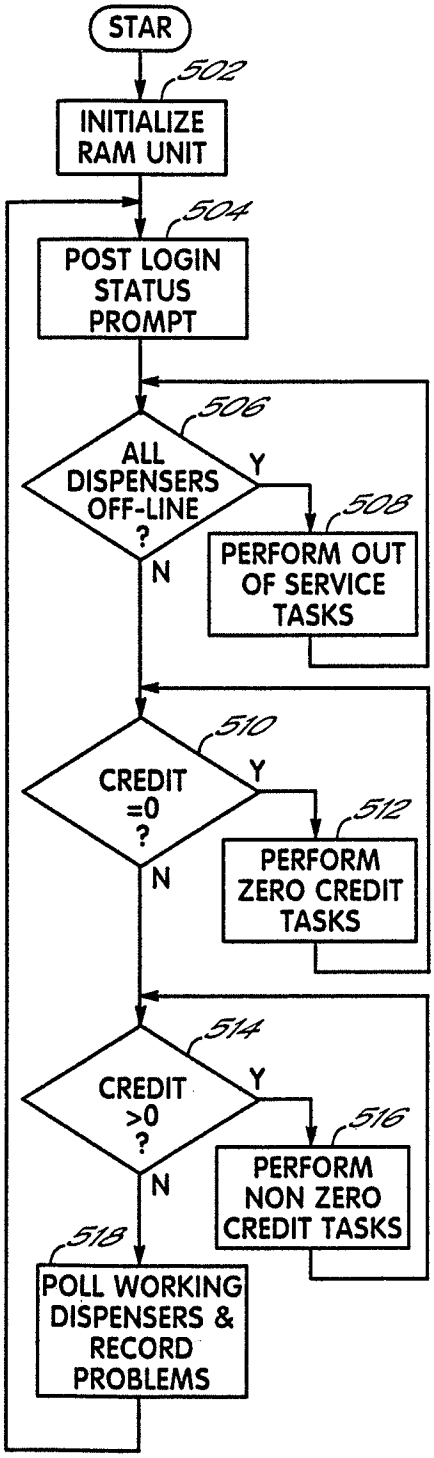
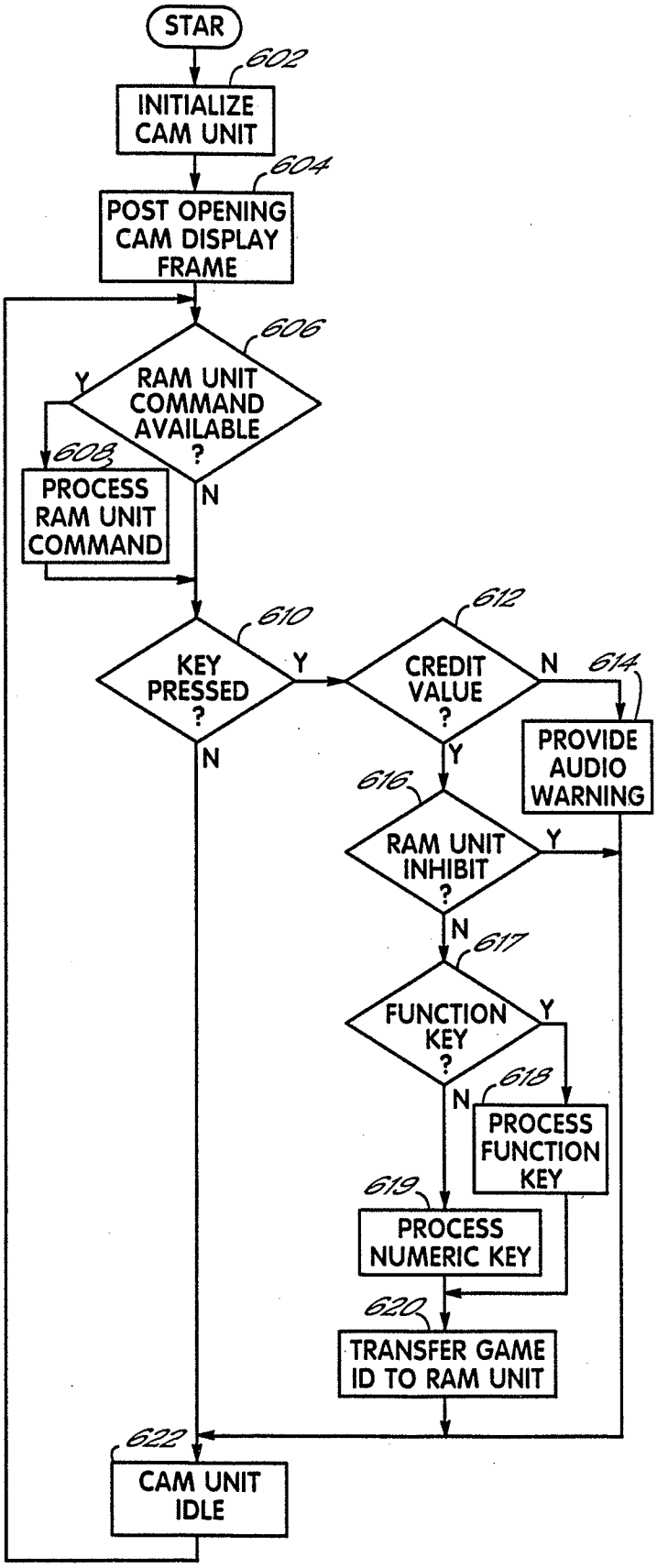

STAR
502
INITIALIZE RAM UNIT
504
POST LOGIN STATUS PROMPT
506
ALL DISPENSERS OFF-LINE ?
Y
N
508
PERFORM OUT OF SERVICE TASKS
510
CREDIT =0 ?
Y
N
512
PERFORM ZERO CREDIT TASKS
514
CREDIT >0 ?
Y
N
516
PERFORM NON ZERO CREDIT TASKS
518
POLL WORKING DISPENSERS & RECORD PROBLEMS

FIG. 5


STAR
602
INITIALIZE CAM UNIT
604
POST OPENING CAM DISPLAY FRAME
606
RAM UNIT COMMAND AVAILABLE ?
Y
N
608
PROCESS RAM UNIT COMMAND
610
KEY PRESSED ?
Y
N
612
CREDIT VALUE ?
N
Y
614
PROVIDE AUDIO WARNING
616
RAM UNIT INHIBIT ?
Y
N
617
FUNCTION KEY ?
Y
N
618
PROCESS FUNCTION KEY
619
PROCESS NUMERIC KEY
620
TRANSFER GAME ID TO RAM UNIT
622
CAM UNIT IDLE

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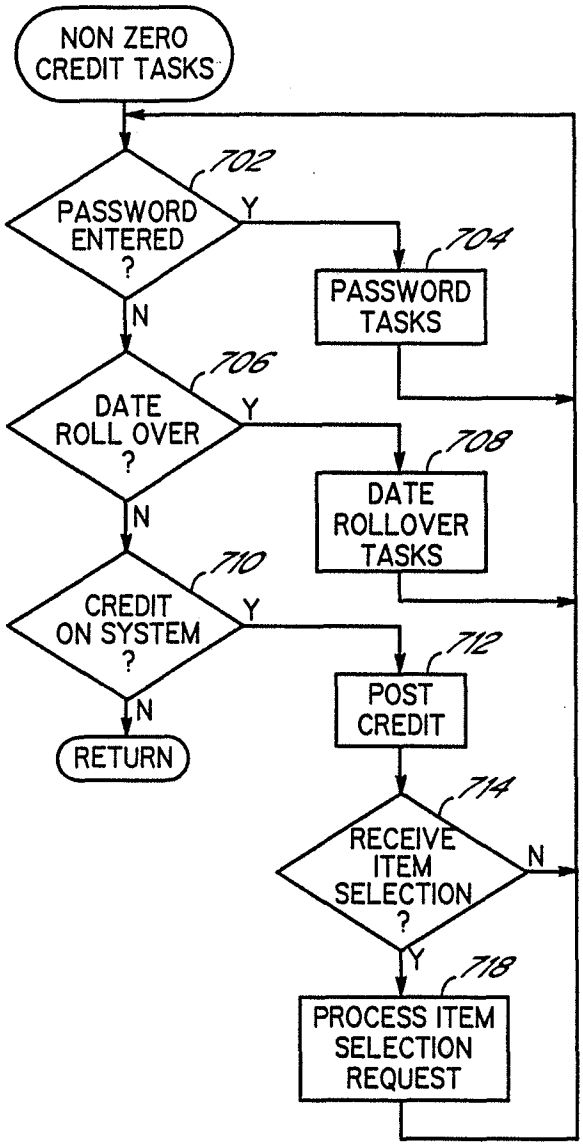
NON ZERO CREDIT TASKS
702
PASSWORD ENTERED ?
Y
N
704
PASSWORD TASKS
706
DATE ROLL OVER ?
Y
N
708
DATE ROLLOVER TASKS
710
CREDIT ON SYSTEM ?
Y
N
RETURN
712
POST CREDIT
714
RECEIVE ITEM SELECTION ?
N
Y
718
PROCESS ITEM SELECTION REQUEST

FIG. 7

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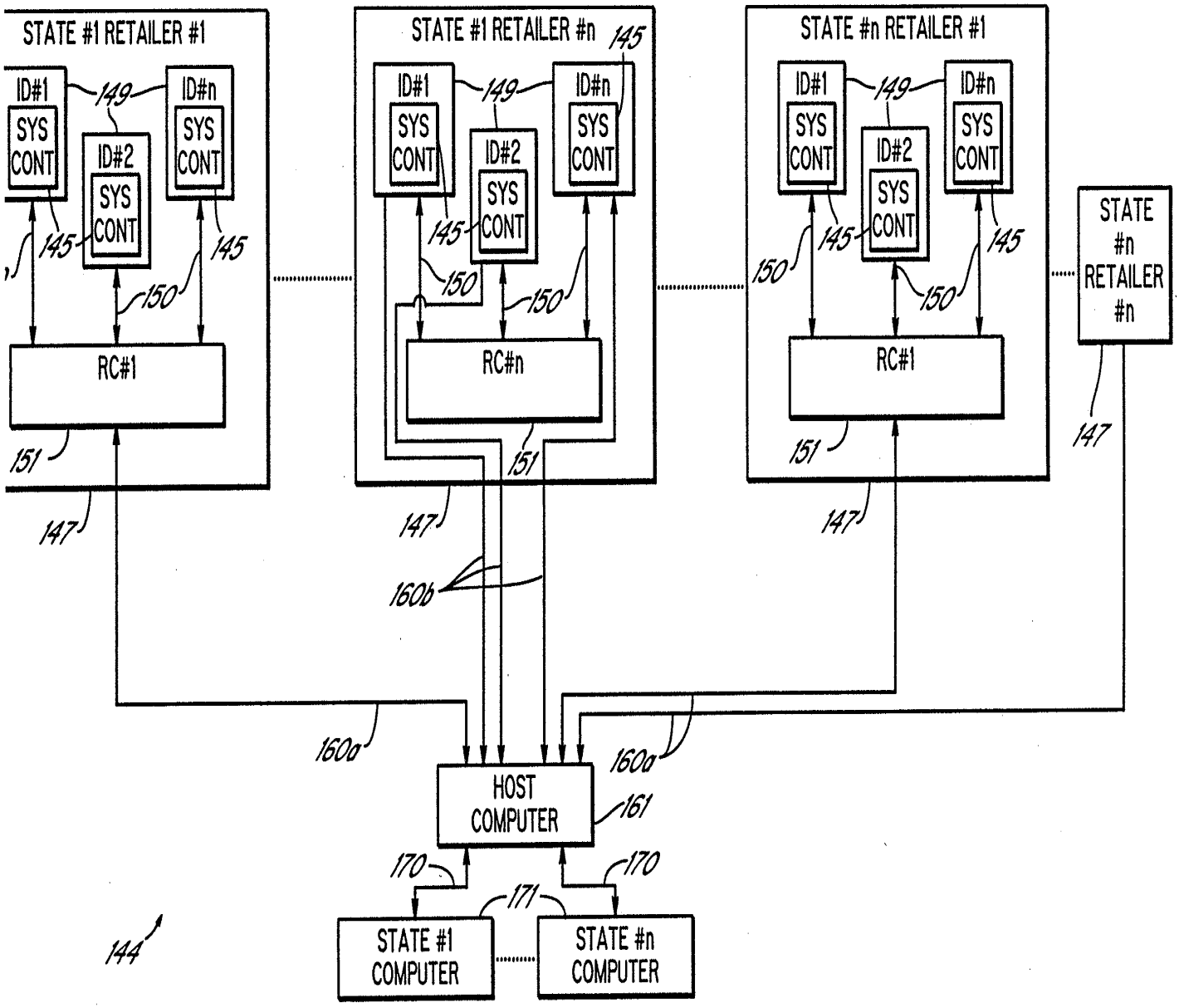
STATE #1 RETAILER #1
ID#1
SYS CONT
149
ID#n
SYS CONT
ID#2
SYS CONT
145
150
RC#1
151
147
STATE #1 RETAILER #n
145
ID#1
SYS CONT
149
ID#n
SYS CONT
ID#2
SYS CONT
145
150
RC#n
151
147
STATE #n RETAILER #1
ID#1
SYS CONT
149
ID#n
SYS CONT
ID#2
SYS CONT
145
150
RC#1
151
147
STATE #n RETAILER #n
147
160b
160a
160a
HOST COMPUTER
161
170
170
171
STATE #1 COMPUTER
STATE #n COMPUTER
144

FIG. 8

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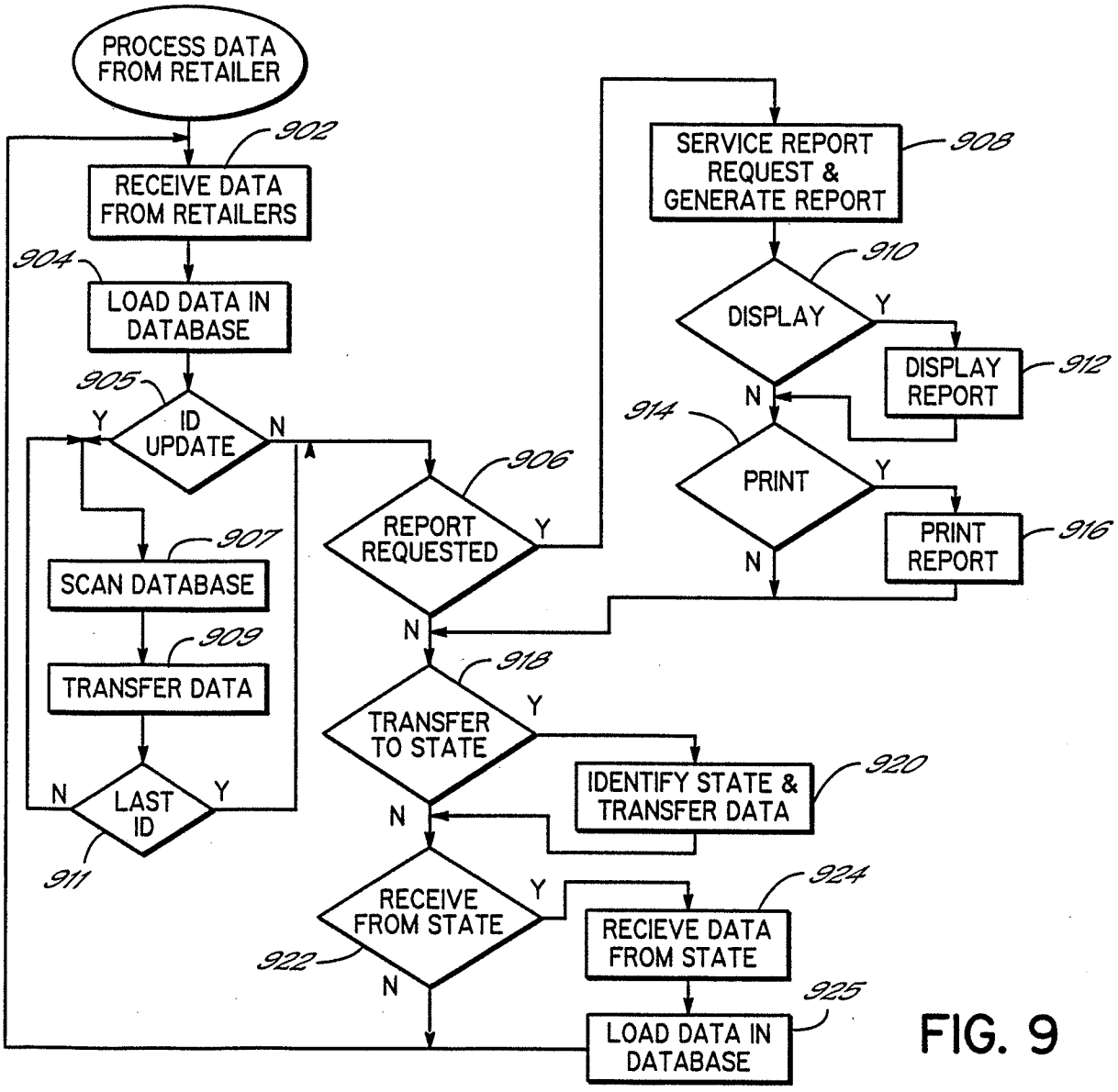
PROCESS DATA FROM RETAILER
902
RECEIVE DATA FROM RETAILERS
904
LOAD DATA IN DATABASE
905
ID UPDATE
Y
N
907
SCAN DATABASE
909
TRANSFER DATA
LAST ID
N
Y
911
906
REPORT REQUESTED
Y
N
908
SERVICE REPORT REQUEST & GENERATE REPORT
910
DISPLAY
Y
N
912
DISPLAY REPORT
914
PRINT
Y
N
916
PRINT REPORT
918
TRANSFER TO STATE
Y
N
920
IDENTIFY STATE & TRANSFER DATA
922
RECEIVE FROM STATE
Y
N
924
RECIEVE DATA FROM STATE
925
LOAD DATA IN DATABASE

FIG. 9

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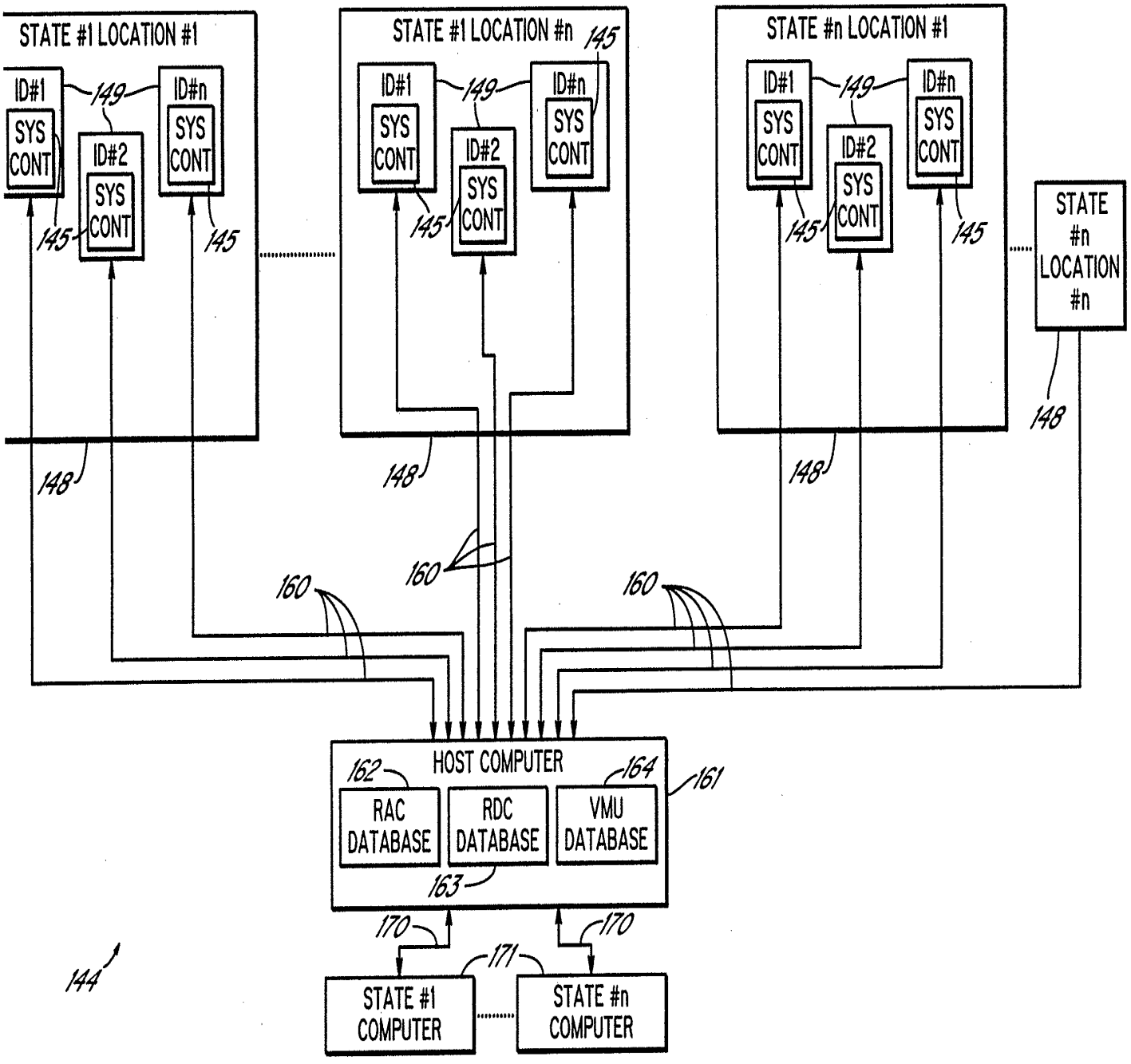
STATE #1 LOCATION #1
ID#1
SYS CONT
149
ID#n
SYS CONT
ID#2
SYS CONT
145
145
145
148
STATE #1 LOCATION #n
145
ID#1
SYS CONT
149
ID#n
SYS CONT
ID#2
SYS CONT
145
148
STATE #n LOCATION #1
ID#1
SYS CONT
149
ID#n
SYS CONT
ID#2
SYS CONT
145
145
148
STATE #n LOCATION #n
148
160
160
160
HOST COMPUTER
162
164
161
RAC DATABASE
RDC DATABASE
VMU DATABASE
163
170
170
171
STATE #1 COMPUTER
STATE #n COMPUTER
144

FIG. 10

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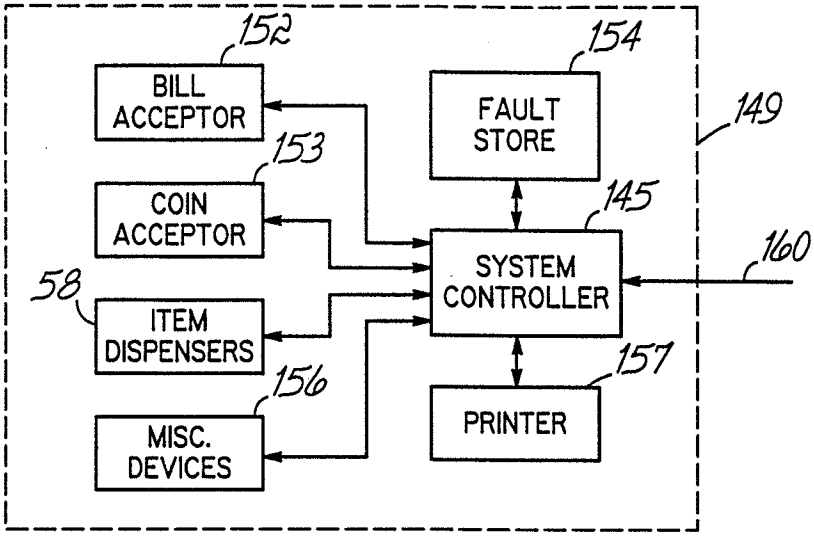
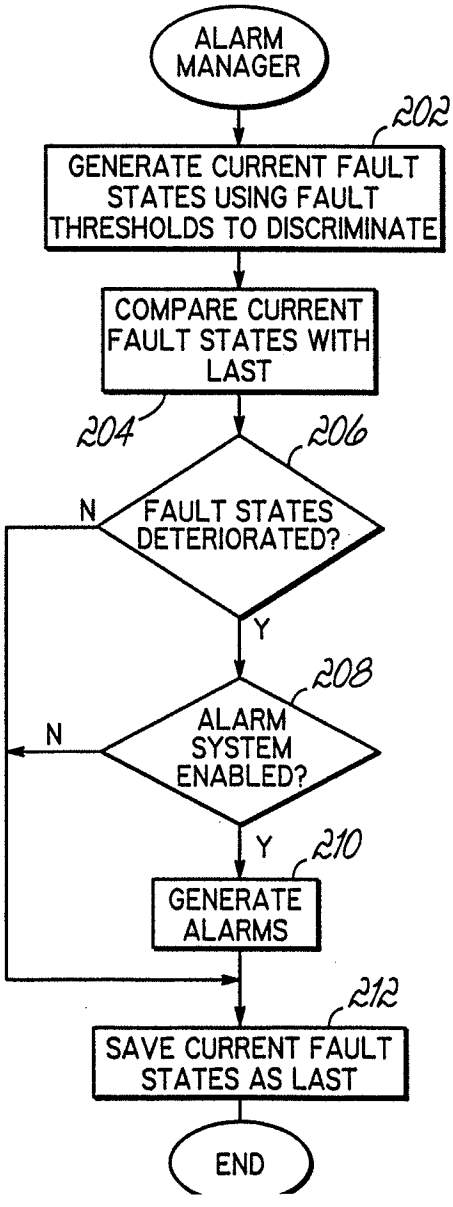

152
BILL ACCEPTOR
153
COIN ACCEPTOR
58
ITEM DISPENSERS
156
MISC. DEVICES
154
FAULT STORE
149
145
SYSTEM CONTROLLER
160
157
PRINTER

FIG. 11


ALARM MANAGER
202
GENERATE CURRENT FAULT STATES USING FAULT THRESHOLDS TO DISCRIMINATE
COMPARE CURRENT FAULT STATES WITH LAST
204
206
FAULT STATES DETERIORATED?
N
Y
208
ALARM SYSTEM ENABLED?
N
Y
210
GENERATE ALARMS
212
SAVE CURRENT FAULT STATES AS LAST
END

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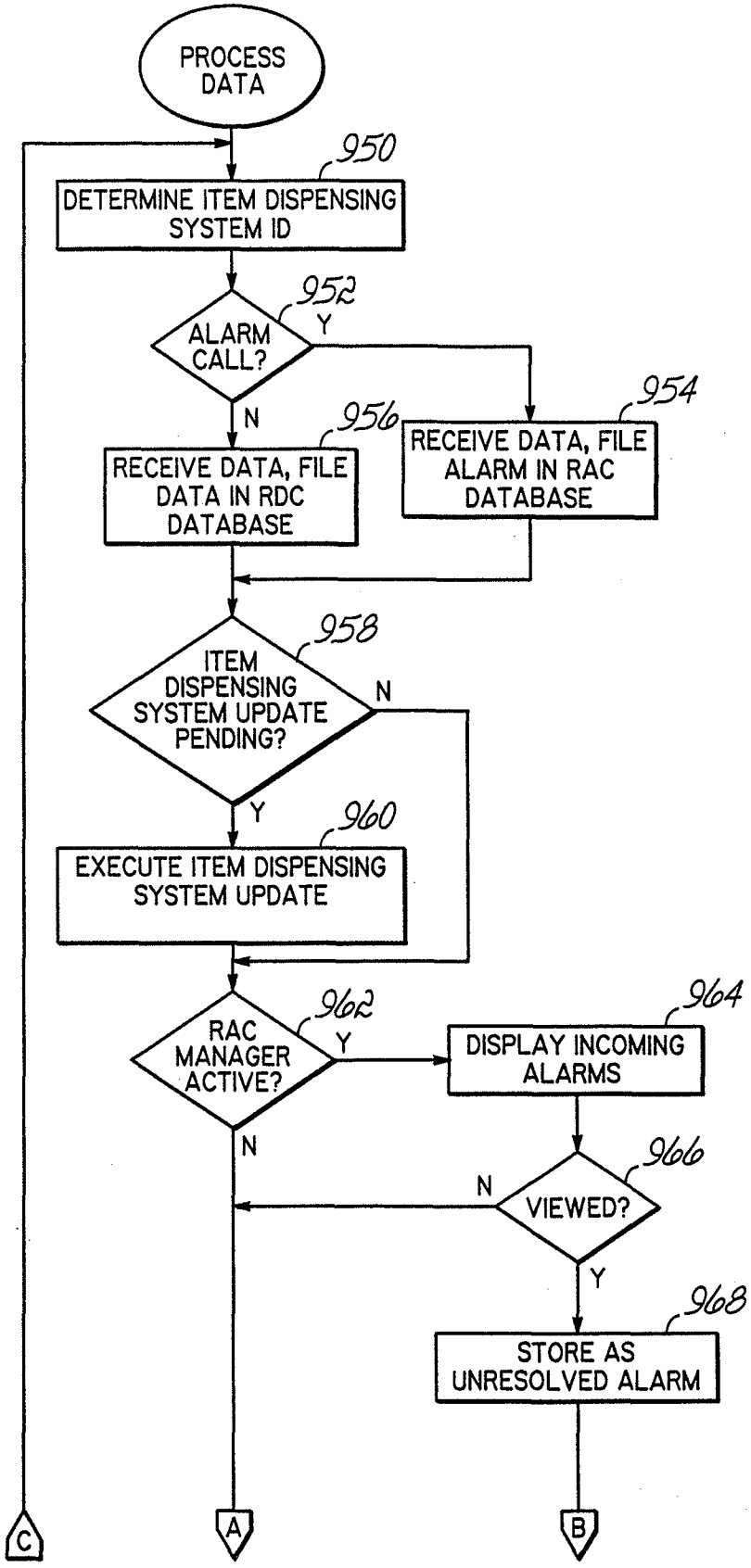
PROCESS DATA
950
DETERMINE ITEM DISPENSING SYSTEM ID
952
ALARM CALL?
Y
N
954
RECEIVE DATA, FILE ALARM IN RAC DATABASE
956
RECEIVE DATA, FILE DATA IN RDC DATABASE
958
ITEM DISPENSING SYSTEM UPDATE PENDING?
N
Y
960
EXECUTE ITEM DISPENSING SYSTEM UPDATE
962
RAC MANAGER ACTIVE?
Y
N
964
DISPLAY INCOMING ALARMS
966
VIEWED?
N
Y
968
STORE AS UNRESOLVED ALARM
C
A
B

FIG. 17A

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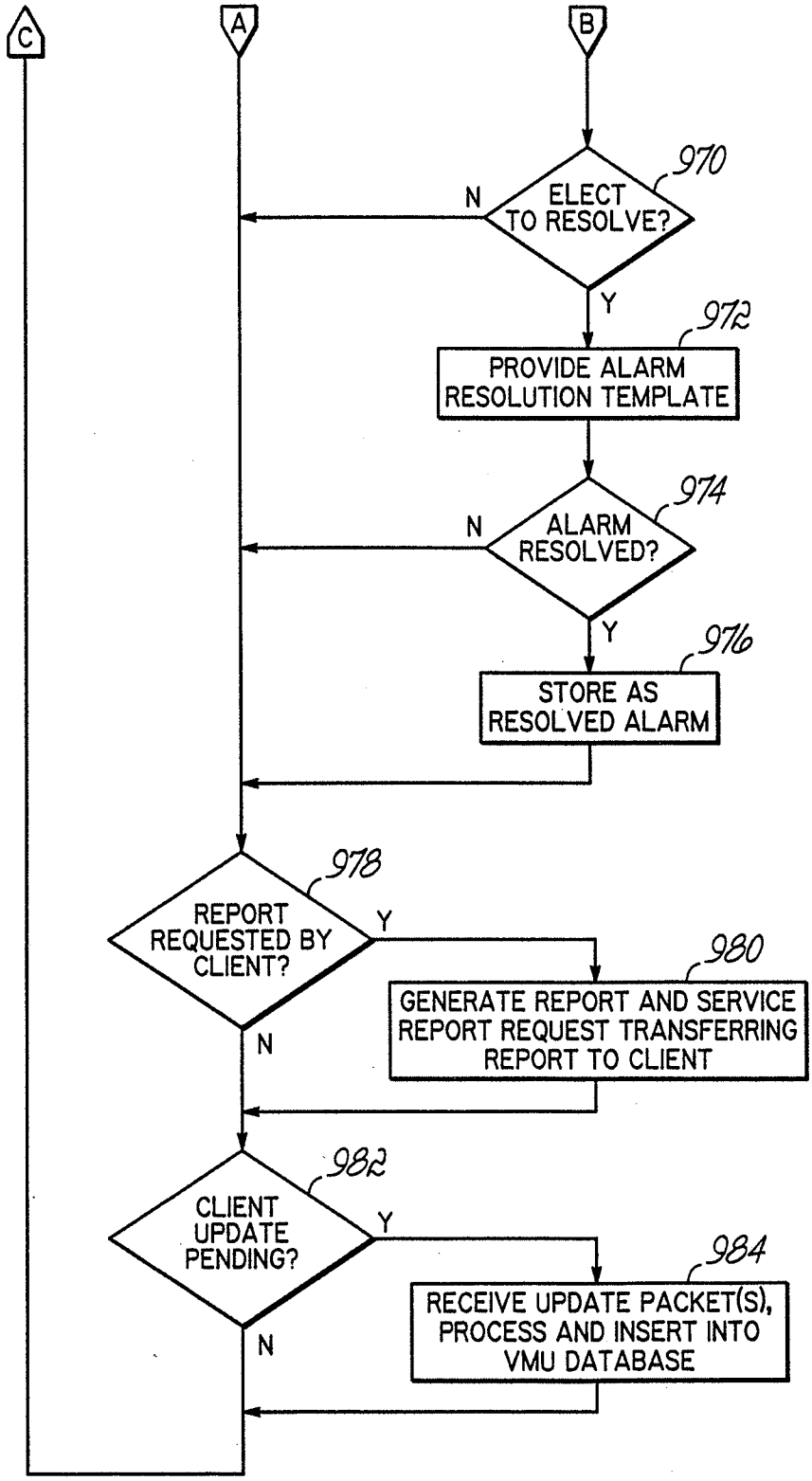
C
A
B
970
ELECT TO RESOLVE?
N
Y
972
PROVIDE ALARM RESOLUTION TEMPLATE
974
ALARM RESOLVED?
N
Y
976
STORE AS RESOLVED ALARM
978
REPORT REQUESTED BY CLIENT?
Y
N
980
GENERATE REPORT AND SERVICE REPORT REQUEST TRANSFERRING REPORT TO CLIENT
982
CLIENT UPDATE PENDING?
Y
N
984
RECEIVE UPDATE PACKET(S), PROCESS AND INSERT INTO VMU DATABASE

FIG. 13B

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EXPRESS MAIL NO.: EL699956626US

APPLICATION FOR UNITED STATES PATENT

Applicants: Joseph C. Perin, Jr., David G. Wagoner

Title: ITEM DISPENSING SYSTEM NETWORK AND METHOD

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SPECIFICATION